



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

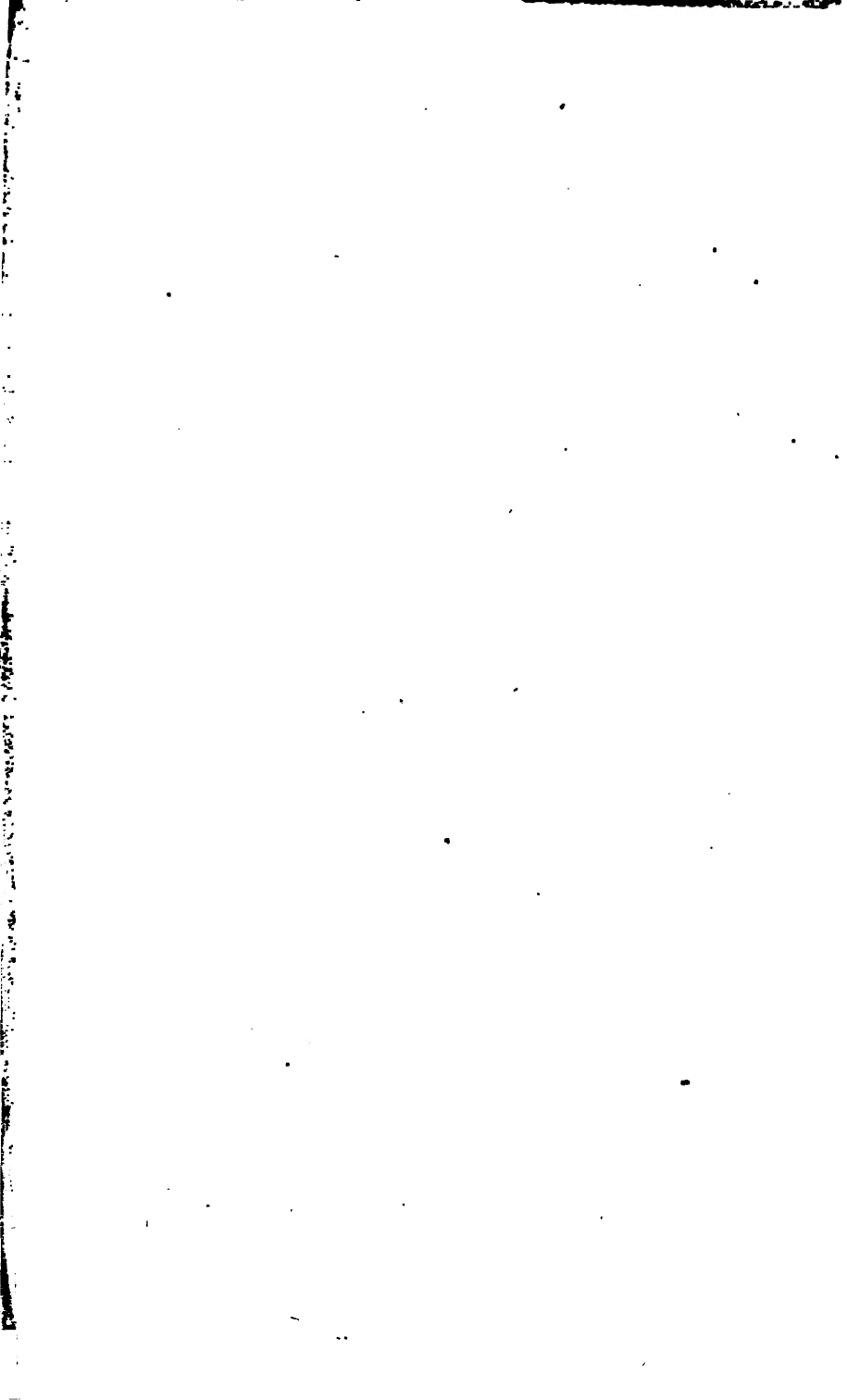
We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

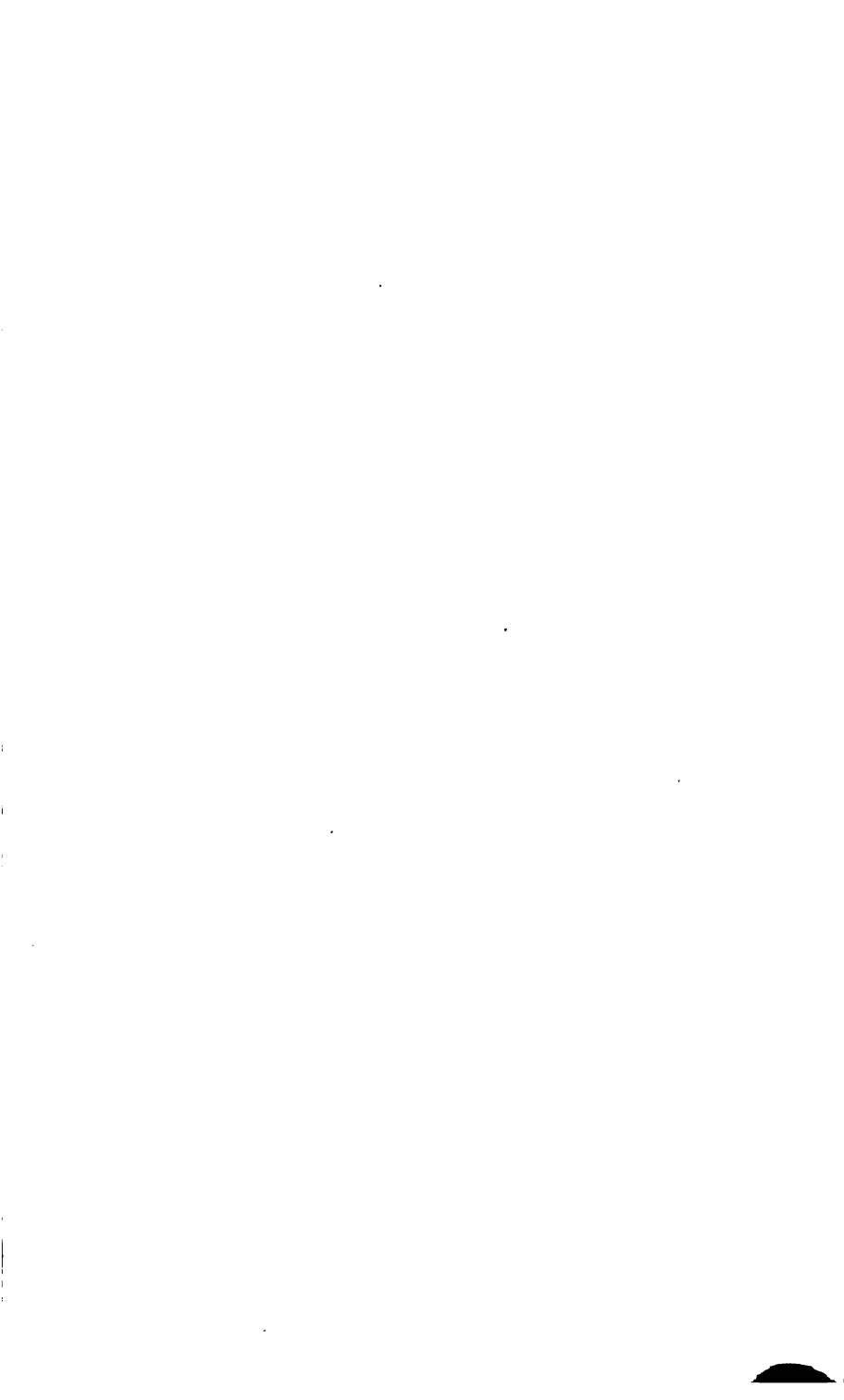
About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

BOSTON
MEDICAL LIBRARY
8 THE FENWAY





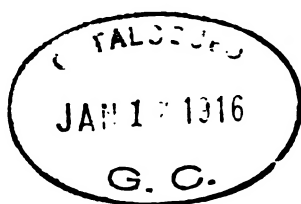




THE
JOURNAL
OF THE
British Dental Association
A
MONTHLY REVIEW OF DENTAL SURGERY

VOL. XVI.
JANUARY TO DECEMBER, 1895

LONDON
PUBLISHED FOR THE PROPRIETORS BY
BAILLIERE, TINDALL & COX
20 & 21, KING WILLIAM STREET, STRAND, W.C.
—
1895



INDEX

	PAGE
A CASE of compound follicular odontome invading the right antrum of Highmore, and obstructing the corresponding nasal fossa, by A. W. de Roaldes, M.D., New Orleans	170
„ of follicular odontome, or dentigerous cyst, by John W. Pare, M.D., &c.	46
„ of marked discolouration in an incisor containing a living pulp, by J. H. Badcock, M.R.C.S., L.R.C.P., L.D.S....	275
„ of osteo-sarcoma of the lower jaw	294
A clinical lecture, angina Ludovici, by Dr. Perry	419
A method of making steel crown dies, by Frank B. Norris	180
„ of obtaining a plaster “model” as good as the mouth, with a view to crowning one or more of the anterior teeth, by R. P. Lennox, Cambridge...	608
A new Columbia dental chair	36
A new form of tooth brush	39
A regulating chloroform inhaler	38
A simple contrivance for administering air in combination with nitrous oxide gas, by C. Carter Braine, F.R.C.S.	208
Abnormal distribution of the anterior palatine artery, a case of aneurism and, by J. H. Edward, L.D.S., R.C.S.I.	272
Abnormal premolar, an, by J. F. Rymer, M.R.C.S., L.D.S., D.D.S....	161
Accessory thyroid gland projecting into the mouth, note on a case of, by C. H. McIlraith, M.A., M.B., C.M.Glas.	44
Ackland, Chastey v.	414
Actinomycosis, human, by Prof. A. Poncet	114
Action against a dentist	281
„ for assault	95
„ for recovery of fees	31, 214
„ of chloroform and other anæsthetic agents, on the physiological, by J. H. Edward, L.D.S., R.C.S.I., &c.	604
Acute alveolar abscess, two cases of, in connection with teeth with living pulps, by A. S. Baker, M.R.C.S., L.R.C.P., L.D.S.Eng.	268
Address, inaugural, by W. B. Macleod, L.D.S.Edin.	542
„ valedictory, by C. S. Tomes, F.R.S., M.A., M.R.C.S., L.D.S.Eng.	550

	PAGE
Adjustment of artificial nose, destruction of nose by lupus, by Arthur S. Underwood, M.R.C.S., L.D.S.	353
Administering air in combination with nitrous oxide gas, a simple contrivance for, by C. Carter Braine, F.R.C.S.	208
Advisability of bridge work, the, by George Thomson, L.D.S.Eng. ...	596
Alveolar abscesses, periodontitis with, following influenza, by F. Denison Pedley, F.R.C.S. Edin., L.D.S.Eng.	274
„ abscess, two cases of acute, in connection with teeth with living pulps, by A. S. Baker, M.R.C.S., L.R.C.P., L.D.S.Eng. ...	268
„ hæmorrhage, lycoperdon for, by C. Brewster, L.D.S. Montreal. ...	349
Alteration of bye law xv.	522
Amalgams	65
American Dental Association, transactions of the	358
Anæsthetics? are dentists legally qualified to administer	33
Anakhre, or goundrou (gros nez)	354
An abnormal premolar, by J. F. Rymer, M.R.C.S., L.D.S., D.D.S. ...	161
„ action for assault	280
„ artificial ear, by H. V. Grove, L.D.S.	118
„ extreme case of angina Ludovici arising from an inflamed carious tooth; death while under operation, by A. E. Prest Hughes, L.R.C.P., M.R.C.S.	240
„ inquiry concerning the safety and sphere of applicability of chloroform in dental surgery, by Frederic Hewitt, M.A., M.D. Cantab. ...	660
„ interesting case in practice	241
Anatomy and pathology of the teeth, by C. F. W. Bödecker, D.D.S., M.D.S.	49
Anæsthetic agents, on the physiological action of chloroform and other, by J. H. Edward, L.D.S., R.C.S.I., &c.	604
Aneurism and abnormal distribution of the anterior palatine artery, a case of, by J. H. Edward, L.D.S., R.C.S.I.	272
Angina Ludovici, a clinical lecture by Dr. Perry	419
„ „ an extreme case of, arising from an inflamed carious tooth, death while under operation, by A. E. Prest Hughes, L.R.C.P. Lond., M.R.C.S.Eng.	240
Annual dinner of the Odonto-Chirurgical Society of Scotland	225
„ General Meeting	196, 305, 435, 505
„ Meeting	133
„ Reports, the	585
Antiseptics in dental surgery, by F. H. Ellwood, L.D.S.	85
Appointments	64, 127, 192, 304, 430, 456, 624, 722
Are dentists legally qualified to administer anæsthetics?	33
Artificial nose, adjustment of, destruction of nose by lupus, by Arthur S. Underwood, M.R.C.S., L.D.S.	353
Artificial ear, an, by H. N. Grove, L.D.S.	118
Assault, an action for	95
Association, the, <i>v.</i> Levey	195
ASSOCIATION INTELLIGENCE :	
Address, Inaugural, Central Counties Branch	540
„ „ Irish Branch	264

ASSOCIATION INTELLIGENCE—*continued.*

Address, Inaugural, Midland Counties Branch ...	...	...	382
„ „ Southern Counties Branch ...	...	...	396
„ „ Western Counties Branch ...	...	...	447
„ Valedictory, Central Counties Branch ...	...	...	540
„ „ Southern Counties Branch ...	...	...	395
Annual dinner at Annual General Meeting ...	...	...	532
„ General Meeting ...	...	259, 372, 436,	507
„ „ „ alteration of bye-law xv. ...	...	...	522
„ „ „ annual dinner ...	...	...	532
„ „ „ conversazione ...	...	...	525
Annual General Meeting, demonstrations at the :—			
Crystal mat gold, by H. B. Ezard, L.D.S. Edin. ...	...	...	621
Glass inlaying, by W. H. Williamson, M.D., L.D.S. ...	...	...	616
Gold filling with Dr. de Trey's (of Basle) solila crystal mat gold, by J. Charters Birch, L.D.S. ...	...	...	615
Newland-Pedley porcelain crown, by Montague F. Hopson, L.D.S. Eng. ...	...	...	621
On a method of making seamless gold crowns, by I. Renshaw, L.D.S.I. ...	...	...	613
Plaster impressions and special trays, by G. Brunton ...	...	...	617
Porcelain inlays, by W. Dall, L.D.S. Glas., Glasgow ...	...	...	623
The hydraulic swager ...	...	...	618
Annual General Meeting, microscopical section... ..	...	197, 259,	441
„ „ „ programme of the ...	...	314, 372,	437
„ „ „ the benevolent fund ...	...	...	525
„ „ „ Secretary's report ...	...	...	517
„ „ „ Treasurer's „ ...	...	...	510
Benevolent Fund ...	...	82, 199, 268,	525, 745
Central Counties Branch ...	...	325, 393, 539,	639
Eastern Counties Branch ...	...	199, 324,	399
Election of ten members of the Representative Board ...	...	...	314
Irish Branch ...	...	...	263
„ „ hon. Secretary's report ...	...	...	266
Metropolitan Branch ...	...	6, 74, 198, 260, 323, 392,	659
Midland Counties Branch ...	...	81, 133, 198, 267, 321, 377, 588,	659, 733
Programme of the Annual General Meeting ...	...	314, 372,	437
Representative Board ...	...	68, 309, 510, 654,	731
„ „ Report of the Journal and Finance Committee ...	...	...	69
Scottish Branch ...	...	...	319, 745
Southern Counties Branch ...	...	6, 81, 198, 262, 323, 394, 589,	658
Special appeal, the Benevolent Fund of the British Dental Associa- tion ...	...	...	82
Western Counties Branch ...	...	138, 198, 267, 318, 403, 445,	588, 657
West of Scotland Branch ...	...	...	137, 319

BADCOCK, J. H., M.R.C.S., L.R.C.P., L.D.S., a case of marked dis-
colouration in an incisor containing a living pulp ... 275

	PAGE
Baker, A. S., M.R.C.S., L.R.C.P., L.D.S.Eng., two cases of acute alveolar abscess in connection with teeth with living pulp ...	268
Balance sheet, the	193
Barrett, W. C., M.D., D.D.S. Buffalo, N.Y., the classification of so-called green stain	663
Benevolent Fund 82, 199, 268,	525
" " special appeal for the, British Dental Association ...	82
Birch, J. Charters, L.D.S., Leeds, gold filling with Dr. de Trey (of Basle) solila crystal mat gold... ..	615
Birmingham Dental Hospital	35
Black, Dr., recent investigation into the constitution of teeth, by Charles S. Tomes, M.A., F.R.C.S.	325, 404
Blood serum as dressing for wounds, preparations of	177
Books received... 64, 128, 192, 256, 303, 368, 432, 504, 584, 648, 724,	796
Bödecker, C. F. W., D.D.S., M.D.S., anatomy and pathology of the teeth	49
Braine, C. Carter, F.R.C.S., a simple contrivance for administering air in combination with nitrous oxide gas	208
Brewster, C., L.D.S., Montreal, lycoperdon for alveolar hæmorrhage ...	349
Bridge work, the advisability of, by George Thomson, L.D.S.Eng. ...	596
Brighton Dental Hospital	111
British Columbia, dental legislation of	276
" Dental Association and its branches, by T. E. King, L.D.S. ...	147
" " " can help the public to better dental service, how the, by T. E. Constant, L.R.C.P. Lond., M.R.C.S., L.D.S.Eng. ...	568
" " " has done for the dental profession, what the, by I. Renshaw, L.D.S.I. ..	554
" " " ought to do for our profession, what the, by T. Gaddes, M.D., U.S.A., L.D.S.Eng. and Edin.	562
" " " v. Louis Levey, prosecution under the Dentists Act	210
" " " v. Rycroft and Browning	408
Brunton, G., plaster impressions and special trays	617
Burdett, Henry C., helps in sickness and in health	243
Bye-law xv., alteration of	522
CAPE OF GOOD HOPE, dental surgery in the	131
Caries, dental, the influence of pregnancy upon, by Reuben Peterson, M.D. ...	344
Case in practice, an interesting	241
" of accessory thyroid gland projecting into the mouth and nose, on a, by C. H. McIlraith, M.D., M.B., C.M. Glasg.	44
" of aneurism and abnormal distribution of the anterior palatine artery, a, by J. H. Edward, L.D.S., R.C.S.I.	272
" of angina Ludovici, an extreme, arising from an inflamed carious tooth; death while under operation, by A. E. Prest Hughes, L.R.C.P. Lond., M.R.C.S.Eng.	240

Case of compound follicular 'odontome invading the right antrum of Highmore and obstructing the corresponding nasal fossa, a, by A. W. de Roaldes, M.D., New Orleans ...	170
„ of follicular odontome or dentigerous cyst, by John W. Pace, M.D., C.M.Edin., L.D.S.Eng. ...	46
„ of marked discolouration of an incisor containing a living pulp, a, by J. H. Badcock, M.R.C.S., L.R.C.P., L.D.S. ...	275
„ of meningitis, notes on a, following suppurative disease of antrum, by Louis Jeffrey, L.D.S.Eng. ...	89
„ of osteo-sarcoma of the lower jaw, a ...	294
Cases, two, of severe trigeminal neuralgia due to nasal disease, by M. P. Mayo Collier, M.S.Lond., F.R.C.S.Eng. ...	640
Central Counties Branch ...	6, 325, 393, 539, 659
„ „ „ annual meeting ...	539
„ „ „ „ „ valedictory address ...	546
Chair, dental, a new Columbia ...	36
Chaster v. Ackland ...	414
Chemistry of dentine, notes upon the, by Charles S. Tomes, M.A., F.R.S. ...	590
Chinese dentistry, extracts from essays on, by A. M. H., communicated through C. Robbins, L.D.S.Eng. ...	26
Chloroform and other anæsthetic agents, on the physiological action of, by J. H. Edward, L.D.S., R.C.S.I., &c. ...	604
„ death from, given for a dental operation ...	119
„ in dental surgery, an inquiry concerning the safety and sphere of applicability of, by Frederic Hewitt, M.A., M.B.Cantab ...	660
„ inhaler, a regulating ...	38
„ question, the ...	649
Chronic stomatitis followed by death ...	293
Claim for fees, a, Crewe county court ...	95
Classification of the so-called green stain, by C. W. Barrett, M.D., D.D.S., Buffalo, N.Y. ...	626
Clinical lecture, a, angina Ludovici, by Dr. Perry ...	419
Coagulants and non-coagulants, by A. W. Harlan, M.D., D.D.S., Chicago, Ill. ...	230
„ the relative penetrating power of, by James Truman, Philadelphia, Pa. ...	174
Collier, M. P. Mayo, M.S.Lond., F.R.C.S.Eng., two cases of severe trigeminal neuralgia due to nasal disease ...	640
Columbia, British, dental legislation of ...	276
Compensation for disturbance, Johnson v. M. S. L. Railway Co. ...	624
Compound follicular odontome invading the right antrum of Highmore, a case of, and obstructing the corresponding nasal fossa, by A. W. de Roaldes, M.D., New Orleans ...	170
Constant, T. E., L.R.C.P.Lond., M.R.C.S., L.D.S.Eng., how the British dental profession can help the public to better dental service ...	568
Constant, T. E., L.R.C.P., M.R.C.S., L.D.S., the treatment of undue prominence of the upper front teeth in children and young adults ...	201
Constitution of teeth, Dr. Black's recent investigation into the, by Charles S. Tomes, M.A., F.R.S. ...	325, 404

	PAGE
Contrivance, a simple, for administering air in combination with nitrous oxide gas, by C. Carter Braine, F.R.C.S.	208
Conversazione at Annual General Meeting	525
CORRESPONDENCE :—	
Collins' Relief Fund	367
Dentists by vocation or dentists by expediency	255
Dental advertising'	63
„ progress	792
General surgery and pathology for dentists	431
Hospitals in fact and fiction	127
Injection of chloride of ethyl	647
Lady members	723, 795
On the administration of nitrous oxide	61
Should dentists administer nitrous oxide?	125
Some medical views of the teeth	793
The art of casting and working sheet metal	138
„ „Medical Acts Amendment Bill”	190
„ new Columbia dental chair	126
„ regulating chloroform inhaler	254
Tough, leathery bread crusts	63
Type writing	254
Unregistered practitioners and the public	60
Worms in teeth	189
Court, Crewe county, a claim for fees	95
„ Doncaster county, recovery of fees	332
„ Nisi Prius, obstructing light and air... ..	94
Council, the General Medical	307
Craig, J. T., L.D.S.Edin., some ethical considerations in relation to dental practice	138
Crewe county court, a claim for fees	95
Crowns, Newland Pedley porcelain, by Montague F. Hopson, L.D.S.Eng.	621
„ seamless gold, on a method of making, by I. Renshaw, L.D.S.I.	613
Crystal mat gold, by H. B. Ezard, L.D.S.Edin.	621
„ „ „ solila, gold filling with Dr. de Trey (of Basle), by J. Charters Birch, L.D.S., Leeds	615
„ „ „ the use of, by C. Robbins, L.D.S.Eng.	74
Cusps of the human molar teeth, the history of the, by Henry Fairfield Osborn Da Costa	625
DALL, W., L.D.S.Glas., Glasgow, porcelain inlays	623
Darby, Edwin T., M.D., D.D.S., gouty pericementitis	288
Death, chronic stomatitis followed by	293
„ from chloroform given for a dental operation	119
„ under nitrous oxide, through tight lacing.	91
„ while under operation, an extreme case of angina Ludovici arising from an inflamed carious tooth, by A. E. Prest Hughes, L.R.C.P.Lond., M.R.C.S.Eng.	240

DEMONSTRATIONS AT THE ANNUAL GENERAL MEETING :—

Crystal mat gold, by H. B. Ezard, L.D.S. Edin. ...	621
Glass inlaying, by W. H. Williamson, M.D., L.D.S. ...	616
Gold filling with Dr. de Trey's (of Basle) solila crystal mat gold, by J. Charters Birch, L.D.S., Leeds ...	615
Newland-Pedley porcelain crown, by Montague F. Hopson, L.D.S. Eng. ...	621
On a method of making seamless gold crowns, by I. Renshaw, L.D.S.I. ...	613
Plaster impressions and special trays, by G. Brunton ...	617
Porcelain inlays, by W. Dall, L.D.S. Glas., Glasgow ...	623
The hydraulic swager, by C. D. Grundy ...	618
Dental Act, prosecution under the ...	132
„ Association, British, against Louis Levey ...	210
„ „ „ and its branches, by T. E. King, L.D.S. ...	147
„ „ „ what the, ought to do for our profession, by T. Gaddes, M.D. U.S.A., L.D.S. Eng. and Edin. ...	562
„ „ „ v. Rycroft and Browning ...	408
„ „ how the British, can help the public to better dental service, by T. E. Constant, L.R.C.P. Lond., M.R.C.S., L.D.S. Eng. ...	568
„ „ what the British, has done for the dental profession, by I. Renshaw, L.D.S.I. ...	554
„ caries, the influence of pregnancy upon, by Reuben Peterson, M.D. ...	344
„ chair, a new Columbia ...	36
„ Hospital and school, opening of the new, Edinburgh ...	34
„ „ Birmingham ...	35
„ „ Brighton ...	111
„ „ Devon and Exeter ...	226
„ „ Edinburgh ...	113
„ „ Glasgow ...	227
„ „ Liverpool ...	112
„ „ London ...	492
„ „ National ...	224
„ „ Newcastle ...	286
„ „ Students' Society of the London ...	223, 343
„ „ Victoria ...	169
„ legislation of British Columbia ...	276
„ microscopy, by A. Hopewell Smith ...	357
„ practice, some ethical considerations in relation to, by J. T. Craig, L.D.S. Edin. ...	138
„ profession, the ethical status of the, by Thomas Gaddes, M.A., &c., U.S.A., L.D.S. Eng. and Edin. ...	154
„ profession, the ethical status of the, by Frederick Rose, L.D.S. Eng. ...	158
„ School, Edinburgh ...	495
„ surgery, antiseptics in, by F. H. Ellwood, L.D.S. ...	85
„ „ in the Cape of Good Hope ...	131

	PAGE
Dental surgery, science and, by J. Humphreys, L.D.S.I., F.L.S. ...	593
Dentigerous cyst, a case of follicular odontome, or, by John W. Pare, M.D., C.M. Edin., L.D.S. Eng.	46
Dentine, notes upon the chemistry of, by Charles S. Tomes, M.A., F.R.S.	590
Dentist, action against a	281
Dentistry, Chinese, extracts from essays on, by A. M. H., communicated through C. Robbins, L.D.S. Eng.	26
Dentists Act, prosecution under the, British Dental Association v. Louis Levey	210
Dentists, are, legally qualified to administer anæsthetics ?	33
Dentists, general surgery and pathology for, by Edmund W. Roughton	358
Destruction of nose by lupus, adjustment of artificial nose by Arthur S. Underwood, M.R.C.S., L.D.S.	353
De Trey's, Dr. (of Basle), gold filling with solila crystal mat gold, by J. Charters Birch, L.D.S., Leeds	615
Devon and Exeter Dental Hospital	226
Disturbance, compensation for, Johnson v. M.S. & L. Railway Co. ...	624
Doncaster county court, recovery of fees	332
Dressings for wounds, preparations of blood serum as	177
EAR, an artificial, by H. N. Grove, L.D.S.	118
Eastern Counties Branch	199, 324, 399
" " " annual meeting	399
" " " report	400
Edinburgh Dental Hospital	113
" " School	495
" opening of the new Dental Hospital and School	34
EDITORIALS :	
1894	I
Amalgams	65
Annual General Meeting	196, 305, 435, 505
" meeting	133
Dental surgery in the Cape of Good Hope	131
Museums for teaching purposes	257
"Nasmyth membrane"	4
Parents' liabilities	129
Prosecution under the Dentists Act	132
Recent Trials	730
Sir John and Lady Tomes' golden wedding gift fund	197
Sir John Tomes	433
The annual reports	585
The Association v. Levey	195
The balance sheet	193
The chloroform question	649
The general medical council	307, 725
The recent prosecutions	369
Educational supplement	after page 584
Edward, J. H., L.D.S., R.C.S.I., a case of aneurism and abnormal distribution of the anterior palatine artery	272

Election of ten members of the Representative Board	...	...	314
Ellwood, F. H., L.D.S., antiseptics in dental surgery	...	...	85
Epithelioma of the tongue in women, by Chauncy Puzey, F.R.C.S.Eng.	...	...	241
Ethical considerations, some, in relation to dental practice, by J. T. Craig, L.D.S.Edin.	...	...	138
„ status of the dental profession, the, by Thomas Gaddes, M.D. &c., U.S.A., L.D.S.Eng. and Edin.	...	...	154
„ status of the dental profession, the, by Frederick Rose, L.D.S.Eng.	...	...	158
Extracts from essays on Chinese dentistry, by A. M. H., communicated through C. Robbins, L.D.S.Eng.	...	...	26
Extreme case of angina Ludovici, arising from an inflamed carious tooth, death while under operation, by A. E. Prest Hughes, L.R.C.P.Lond., M.R.C.S.Eng.	...	...	240
Ezard, H. B., L.D.S.Edin., crystal mat gold	...	...	621
FEES, a claim for, Crewe county court	...	...	95
„ recovery of, action for the...	...	...	31, 214
„ „ „ Doncaster county court	...	...	332
Filling materials, plastic, for combination, by C. S. Read, L.D.S.Eng.	...	...	7
Foister v. Penfold, action for recovery of fees	...	...	31
Follicular odontome, a case of compound, invading the right antrum of Highmore, and obstructing the corresponding nasal fossa, by A. W. de Roaldes, M.D., New Orleans	...	...	170
Follicular odontome, or dentigerous cyst, a case of, by John W. Pare, M.D., C.M.Edin., L.D.S.Eng.	...	...	46
Formaline, by Dr. G. Forssman, Tandläkare, Stockholm	...	...	355
GADDES, Thomas, M.A., &c., U.S.A., L.D.S.Eng., and Edin., the ethical status of the dental profession	...	...	154
Gaddes, Thomas, M.A., &c., U.S.A., L.D.S.Eng. and Edin., what the British Dental Association ought to do for our profession...	...	...	362
General Medical Council, the	...	...	307, 334
„ surgery and pathology for dentists, by Edmund W. Roughton...	...	...	358
Gift fund, Sir John and Lady Tomes' golden wedding	...	...	197
Glasgow Dental Hospital	...	...	227
Glass inlaying, by W. H. Williamson, M.D., L.D.S.	...	...	616
Gold filling with Dr. de Trey's (of Basle) solila crystal mat gold, by J. Charters Birch, L.D.S., Leeds	...	...	615
Golden wedding gift fund, Sir John and Lady Tomes'	...	...	197
Goundrou or anakhre (gros nez)	...	...	354
Gouty pericementitis, by Edwin T. Darby, M.D., D.D.S.	...	...	288
Green stain, the, classification of so-called, by W. C. Barrett, M.D., D.D.S., Buffalo, N.Y.	...	...	636
(Gros nez), goundrou or anakhre	...	...	354
Grove, H. N., L.D.S., an artificial ear	...	...	118
Grundy, C. D., the hydraulic swager	...	...	618

HÆMORRHAGE, alveolar, lycoperdon for, by C. Brewster, L.D.S.	
Montreal	349
Harlan, A. W. and Louis Ottofy, transactions of the World's Columbian Dental Congress	243
,, coagulants and non-coagulants	230
,, rubefacients and vesicants	352
Harrison, Frank, M.R.C.S., L.D.S., Sheffield, replantation	456
Helps in sickness and in health, by Henry C. Bordett	243
Hewitt, Dr. A. C., amalgam and how to manipulate it	639
,, Frederic, M.A., M.D.Cantab., an inquiry concerning the safety and sphere of applicability of chloroform in dental surgery	660
History of the cusps of the human molar teeth, the, by Henry Fairfield Osborn, Da Costa Prof. of Biology, Columbia College, New York	625
Hopson, Montague F., L.D.S.Eng., Newland-Pedley porcelain crown	621
How the British Dental profession can help the public to better dental service, by T. E. Constant, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.	568
How to manipulate amalgam, by Dr. A. C. Hewitt	639
Hughes, A. E. Prest, L.R.C.P.Lond., M.R.C.S.Eng., an extreme case of angina Ludovici arising from an inflamed carious tooth; death while under operation	240
Human actinomycosis, by Prof. A. Poncet	114
,, molar teeth, the history of the cusps of the, by Henry Fairfield Osborn, Da Costa Professor of Biology, Columbia College, New York	625
Humphreys, J., L.D.S.I., F.L.S., science and dental surgery	593
Hydraulic swager, the, by C. D. Grundy	618
 IMPURITIES, wax and its, by S. B. Proctor	178
Inaugural address, by W. B. MacLeod, Edinburgh	542
,, ,, Irish Branch	264
,, ,, Southern Counties Branch	396
,, ,, Western ,, ,, 	447
Influence of pregnancy upon dental caries, the, by Reuben Peterson, M.D.	344
Influenza, periodontitis with alveolar abscesses following, by F. Denison Pedley, F.R.C.S. Edin., L.D.S.Eng.	274
Inhaler, a regulating chloroform	38
Inquiry, an, concerning the safety and sphere of applicability of chloroform in dental surgery, by Frederic Hewitt, M.A., M.D.Cantab.	660
Interesting case in practice, an	241
Irish Branch	263
,, ,, president's inaugural address	264
,, ,, report	266
 JEFFERY, LOUIS, L.D.S.Eng., notes on a case of meningitis following suppurative disease of antrum	89
Johnson v. M. S. & L. Railway Company, compensation for disturbance	624

KING, T. E., L.D.S., the British Dental Association and its branches... 147

LECTURE, a clinical, Ludovici angina, by Dr. Perry... 419

LEGAL INTELLIGENCE :—

Action against a dentist ... 281

Action by a dentist for fees ... 759

Action for recovery of fees, *Penfold v. Foister* ... 31

Action for the recovery of fees ... 214

Alleged dental association ... 761

An action for assault ... 280

Are dentists legally qualified to administer anæsthetics? ... 33

Chastey v. Ackland... 414

Claim for fees ... 758

Compensation for disturbance ... 624

Crewe county court, a claim for fees ... 95

Death under nitrous oxide through tight lacing ... 91

Dental legislation of British Columbia ... 276

Doncaster county court, recovery of fees ... 332

Nisi Prius court, obstructing light and air ... 94

Prosecution under the Dentists Act, *British Dental Association v.*

Louis Levey ... 210

Strand barbers case ... 763

The British Dental Association *v. Rycroft and Browning* ... 408

Webb v. Williams ... 32

Legislation, dental, of British Columbia ... 276

Lennmalm, Herman, D.D.S., World's history and review of dentistry... 359

Lennox, R. P., Cambridge, a method of obtaining a plastic model as good
as the mouth, with a view of crowning one

more of the anterior teeth ... 608

„ „ some methods in practice ... 571

Levey, the Association v. ... 195

List of executive officers and members of the Representative Board of
the British Dental Association ... 653

Liverpool Dental Hospital ... 112

London Dental Hospital... 222, 492

„ „ „ Students' Society of the ... 223, 343

Ludovici, angina, a clinical lecture, by Dr. Perry ... 419

„ „ an extreme case of, arising from an inflamed carious
tooth, death while under operation, by A. E. Prest

Hughes, L.R.C.P.Lond, M.R.C.S.Eng. ... 240

Lupus, destruction of nose by, adjustment of artificial nose, by Arthur
S. Underwood, M.R.C.S., L.D.S. ... 353

Lycoperdon for alveolar hæmorrhage, by C. Brewster, L.D.S., Montreal 349

MACLEOD, W. B., L.D.S.Edin., inaugural address... 542

Making steel crown dies, a method of, by Frank B. Norris ... 180

Malignant disease of the peridental membrane, on, by A. Hopewell
Smith, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng. ... 578

	PAGE
McIlraith, C. H., M.A., M.B., C.M.Glas., notes on a case of accessory thyroid gland projecting into the mouth	44
Medical Council, the General	307
Meloid, a new alloy called	659
Meningitis, notes on a case of, following suppurative disease of antrum, by Louis Jeffery, L.D.S.Eng.	89
Method of making seamless gold crowns, on a, by I. Renshaw, L.D.S.I.	613
" " steel crown dies, a, by Frank B. Norris	180
" obtaining a plaster model as good as the mouth, with a view to crowning one or more of the anterior teeth, a, by R. P. Lennox, Cambridge	608
Methods in practice, some, by R. P. Lennox, Cambridge	571
Metropolitan Branch 6, 74, 198, 260, 323, 392,	659
" " annual meeting	74
" " " " valedictory address	77
Microscopical Section of Annual General Meeting	197, 259, 441
Microscopy, dental, by A. Hopewell Smith	357
Midland Counties Branch 81, 133, 198, 267, 321, 377, 588,	659
" " " annual meeting	377
" " " " " president's address	382
MINOR NOTICES AND CRITICAL ABSTRACTS:—	
A case of compound follicular odontome invading the right antrum of Highmore, and obstructing the corresponding nasal fossa, by A. W. de Roaldes, M.D., New Orleans	170
" " follicular odontome or dentigerous cyst, by John W. Pare, M.D., C.M.Edin., L.D.S.Eng.	46
" " osteo-sarcoma of the lower jaw	295
A method of making steel crown dies, by Frank B. Norris	180
An artificial ear, by H. N. Grove, L.D.S.	118
" extreme case of angina Ludovici arising from an inflamed carious tooth, death while under operation, by A. E. Prest Hughes, L.R.C.P., M.R.C.S.... ..	240
" interesting case in practice	241
Angina Ludovici, a clinical lecture, by Dr. Perry	419
Amalgam and how to manipulate it, by A. C. Hewitt	639
Chronic stomatitis followed by death	293
Coagulants and non-coagulants, by A. W. Harlan, M.D., D.D.S.Chicago, Ill.	230
Death from chloroform given for a dental operation	119
Destruction of nose by lupus, adjustment of artificial nose, by Arthur S. Underwood, M.R.C.S., L.D.S.	353
Epithelioma of the tongue in women, by Chauncey Puzey, F.R.C.S.Eng.	241
Formaline, by Dr. G. Forrsmann, Tandläkare, Stockholm	355
Goundron or anakhre (gros nez)	354
Gouty pericementitis, by Edwin T. Darby, M.D., D.D.S.	288
Human actinomycosis, by Professor A. Poucet	114
Lycoperdon for alveolar hæmorrhage, by C. Brewster, L.D.S. Montreal	349

MINOR NOTICES AND CRITICAL ABSTRACTS—*continued.*

Nasmyth's membrane, by F. T. Paul, F.R.C.S.	...	...	40
Note on the probable existence of nitrous oxide in the air, by J. Alfred Wanklyn	...	...	47
Notes on a case of accessory thyroid gland projecting into the mouth, by C. H. McIlraith, M.A., M.B., C.M.Glas.	...	...	44
On malignant disease of the peridental membrane, by A. Hopewell Smith, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.	...	...	578
Orthochromatic plates and photo-micrography	...	...	356
Perforating disease in the mouth	...	...	179
Plexiform sarcomata of the palate and velum palati	...	...	292
Preparations of blood-serum as dressing for wounds	...	...	177
Rubefacients and vesicants, by A. W. Harlan, M.D., D.D.S.	...	...	352
Some statistics showing the relative loss from all causes of the different permanent teeth, by J. W. Pare and Herbert Wallis...	...	...	115
Sulphuric acid and peroxide of sodium in the treatment of pulpless teeth, by F. T. Van Woert, M.D.S., Brooklyn, N.Y.	...	...	237
The classification of so-called green stain, by W. C. Barrett, M.D., D.S.S., Buffalo, N.Y.	...	...	636
The influence of pregnancy upon dental caries, by Reuben Peterson, M.D....	...	...	344
The history of the cusps of the human molar teeth, by Henry Fairfield Osborn, Da Costa Professor of Biology, Columbia College, New York	...	...	625
The relative penetrating power of coagulants, by James Truman, Philadelphia, Pa.	...	...	174
Two cases of severe trigeminal neuralgia due to nasal disease, by M. R. Mayo Collier, M.S.Lond., F.R.C.S.Eng.	...	...	640
Wax and its impurities, by B. S. Proctor	...	...	178
Miscellanea	...	52, 120, 183, 245, 296, 360, 427, 497, 580, 642, 719,	787
Molar teeth, the history of the cusps of the human, by Henry Fairfield Osborn, Da Costa Professor of Biology, Columbia College, New York	...	...	625
Mouth, perforating disease of the...	...	...	179
Museums for teaching purposes	...	...	257
NASAL disease, two cases of severe trigeminal neuralgia due to, by M. P. Mayo Collier, M.S.Lond., F.R.C.S.Eng.	...	...	640
"Nasmyth membrane"...	...	...	4
" " by F. T. Paul, F.R.C.S.	...	...	40
National Dental Hospital	...	...	224
Neuralgia, two cases of severe trigeminal, due to nasal disease, by M. P. Mayo Collier, M.S.Lond., F.R.C.S.Eng.	...	...	640
New Columbia dental chair	...	...	36
New Dental Hospital and School, opening of the, Edinburgh	...	...	34
New form of tooth-brush	...	...	39
Newcastle	...	...	286
Newland-Pedley porcelain crown, by Montague F. Hopson, L.D.S.Eng.	...	...	621

NEW INVENTIONS :—

A new Columbia dental chair	...	...	...	...	36
„ form of tooth brush	...	...	...	...	39
A regulating chloroform inhaler	...	...	...	...	38
Nisi Prius court, obstructing light and air	...	...	...	...	94
Nitrous oxide, death under, through tight lacing	...	...	...	...	91
„ „ gas, a simple contrivance for administering air in combination with, by C. Carter Braine, F.R.C.S.	...	...	...	...	208
„ „ in the air, note on the probable existence of, by J. Alfred Wanklyn	...	...	...	...	47
Non-coagulants, coagulants and, by A. W. Harlan, M.D., D.D.S., Chicago, Ill.	...	...	...	...	230
Norris, Frank B., a method of making steel crown dies	...	...	...	...	180
Nose, adjustment of artificial, destruction of nose by lupus, by Arthur S. Underwood, M.R.C.S., L.D.S.	...	...	...	...	353
Notes on a case of accessory thyroid gland projecting into the mouth, by C. H. McIlraith, M.A., M.B., C.M. Glasg.	...	...	...	...	44
„ on a case of meningitis following suppurative disease of antrum, by Louis Jeffery, L.D.S. Eng.	...	...	...	...	89
„ upon the chemistry of dentine, by Charles S. Tomes, M.A., F.R.S., &c.	...	...	...	...	590
Notices, and reviews of books	...	...	...	...	49, 243, 357
Notices to Correspondents	64, 128, 192, 256, 304, 368, 432, 504, 584, 648, 724				

OBITUARY :—

Chandler, Thomas Henderson, A.M., LL.B., M.D. D.M.D.	...	641
Garretson, James E.	...	786
Hulke, John Whitaker, F.R.S.	...	180
Huxley, the Right Hon. Thomas Henry, P.C., F.R.C.S., M.D., F.R.S., LL.D., D.C.L., &c.	...	425
Mills, Joseph, M.R.C.S. Eng.	...	425
Parkinson, Mr. James	...	242, 295
Pasteur, Louis	...	641
Savory, Sir William Scovell, Bart., F.R.S.	...	181
Spence, Dr. Alexander	...	242
Tomes, Sir John, F.R.S., F.R.C.S., L.D.S. Eng.	...	462
Obstructing light and air, Nisi Prius court	...	94
Odonto-Chirurgical Society of Scotland, annual dinner	...	225
Odontological Society of Great Britain, the	34, 96, 110, 163, 216, 282, 343, 415, 708, 770	
Odontome, a case of follicular, or dentigerous cyst, by John W. Pare, M.D., C.M. Edin., L.D.S. Eng.	...	46
On Dr. Black's recent investigations into the constitution of teeth, by Charles S. Tomes, M.A., F.R.S.	...	325, 404
„ malignant disease of the peridental membrane, by A. Hopewell Smith, L.R.C.P. Lond., M.R.C.S., L.D.S. Eng.	...	578
„ the physiological action of chloroform and other anæsthetic agents, by J. H. Edward, L.D.S., R.C.S.I., &c.	...	604

On the reflection of pain from one nerve ending to another, by T. Sydney Short, M.D.	14
„ the use of crystal mat gold, by C. Robbins, L.D.S.Eng.	74
Opening of the new Dental Hospital and School, Edinburgh	34
ORIGINAL COMMUNICATIONS :	
A case of aneurism and abnormal distribution of the anterior palatine artery, by J. H. Edward, L.D.S., R.C.S.I.	272
„ „ marked discolouration in an incisor containing a living pulp, by J. H. Badcock, M.R.C.S., L.R.C.P., L.D.S.	275
A method of obtaining a plaster model as good as the mouth with a view to crowning one or more of the anterior teeth, by R. P. Lennox, Cambridge	608
An abnormal premolar, by J. F. Rymer, M.R.C.S., L.D.S., D.D.S.	161
„ inquiry concerning the safety and sphere of applicability of chloroform in dental surgery, by Frederic Hewitt, M.A., M.D.Cantab.	660
Antiseptics in dental surgery, by F. H. Ellwood, L.D.S.	85
A simple contrivance for administering air in combination with nitrous oxide gas, by C. Carter Braine, F.R.C.S.	208
Extracts from essays on Chinese dentistry, by A. M. H., communicated through C. Robbins, L.D.S.Eng.	26
How the British Dental Association can help the public to better dental service, by T. E. Constant, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.	568
Inaugural address, by W. B. MacLeod, L.D.S.Edin.	542
Lecture-demonstration on electric energy and its applications to dental surgery	748
Notes on a case of meningitis following suppurative disease of antrum, by Louis Jeffery, L.D.S.Eng.	89
Notes upon the chemistry of dentine, by Charles S. Tomes, M.A., F.R.S.	590
On Dr. Black's recent investigations into the constitution of teeth, by Charles S. Tomes, M.A., F.R.S.	325, 404
On the physiological action of chloroform and other anæsthetic agents, by J. H. Edward, L.D.S., R.C.S.I., &c.	604
On the reflection of pain from one nerve ending to another, by T. Sydney Short, M.D.... ..	14
Periodontitis with alveolar abscess following influenza, by F. Denison Pedley, F.R.C.S.Edin., L.D.S.Eng.	274
Plastic filling materials for combination, by C. S. Reed, L.D.S.Eng.	7
Replantation, by Frank Harrison, M.R.C.S., L.D.S., Sheffield	456
Science and dental surgery, by J. Humphreys, L.D.S.I., F.L.S.	593
Some ethical considerations in relation to dental practice, by J. T. Craig, L.D.S.Edin.... ..	138
„ methods in practice	571
The advisability of bridge work, by George Thomson, L.D.S.Eng.	596
„ British Dental Association and its branches, by T. E. King, L.D.S.	147
„ ethical status of the dental profession, by Frederick Rose, L.D.S.Eng.	158

ORIGINAL COMMUNICATIONS—*continued.*

The ethical status of the dental profession, by Thomas Gaddes, M.D., &c., U.S.A., L.D.S.Eng. and Edin.	154
„ treatment of undue prominence of the upper front teeth in children and young adults, by T. E. Constant, L.R.C.P., M.R.C.S., L.D.S.	201
Two cases of acute alveolar abscess in connection with teeth with living pulps, by A. E. Baker, M.R.C.S., L.R.C.P., L.D.S.Eng.	268
Valedictory address, by C. S. Tomes, F.R.S., M.A., M.R.C.S., L.D.S.Eng.	550
What the British Dental Association has done for the dental profession, by I. Renshaw, L.D.S.I.... ..	554
What the British Dental Association ought to do for our profession, by T. Gaddes, M.D.U.S.A., L.D.S.Eng. and Edin.	562
Orthochromatic plates and photo-micrography	356
Osborn, Henry Fairfield, Da Costa Professor of Biology, Columbia College, New York, the history of the cusps of the human molar teeth	625
Osteo-sarcoma of the lower jaw, a case of	294
Ottoby, Louis, D.D.S., Chicago, and A. W. Harlan, M.D., D.D.S., transactions of the World's Columbian Dental Congress	243
PAIN, on the reflection of, by one nerve ending to another, by T. Sydney Short, M.D.	14
Pare, John W., and Herbert Wallis, some statistics showing the relative loss from all causes of the different permanent teeth	115
Pare, John W., M.D., C.M.Edin., L.D.S.Eng., a case of follicular odontome or dentigerous cyst	46
Parents' liabilities	129
Paul, F. T., F.R.C.S., Nasmyth's membrane	40
Pedley, F. Denison, F.R.C.S.Edin., L.D.S.Eng., periodontitis with alveolar abscesses following influenza	274
Penetrating power of coagulants, the relative, by James Truman, Philadelphia, Pa.	174
Penfold v. Foister, action for recovery of fees	31
Perforating disease in the mouth	179
Pericementitis, gouty, by Edwin T. Darby, M.D., D.D.S.	288
Peridental membrane, on malignant disease of the, by A. Hopewell Smith, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.	578
Periodontitis, with alveolar abscesses following influenza, by F. Denison Pedley, F.R.C.S.Edin., L.D.S.Eng.	274
Peroxide of sodium and sulphuric acid in the treatment of pulpless teeth, by C. T. Van Woert, M.D.S., Brooklyn, N.Y.... ..	237
Perry, Dr., angina Ludovici, a clinical lecture, by	419
Peterson, Reuben, M.D., the influences of pregnancy upon dental caries	344
Photo-micrography, orthochromatic plates and	356
Physiological action of chloroform and other anæsthetic agents, on the, by J. H. Edward, L.D.S., R.C.S.I., &c.	604

Plaster impressions and special trays, by G. Brunton	...	...	617
„ model as good as the mouth, a method of obtaining a, with a view of crowning one or more of the anterior teeth, by R. P. Lennox, Cambridge	...	...	608
Plastic filling materials for combination, by C. S. Reed, L.D.S.Eng.	...	...	7
Plates, orthochromatic and photo-micrography	...	...	356
Plexiform sarcomata of the palate and velum palati	...	...	292
Porcelain crown, Newland Pedley, by Montague F. Hopson, L.D.S.Eng.	...	...	621
„ inlays, by W. Dall, L.D.S.Glas., Glasgow	...	...	623
Poncet, Prof. A., human actinomycosis	...	...	114
Pregnancy, the influence of, upon dental caries, by Reuben Peterson, M.D.	...	...	344
Premolar, an abnormal by J. F. Rymer, M.R.C.S., L.D.S., D.D.S.	...	...	161
Preparations of blood-serum as dressing for wounds	...	...	177
Proctor, B. S., wax and its impurities	...	...	178
Programme of the annual general meeting	...	...	314, 372, 437
Prosecution under the Dental Act...	...	...	132
„ „ Dentists' Act, British Dental Association v. Louis Levey	...	...	210
Prosecutions, successful	...	...	318
„ the recent...	...	...	369
Pulpless teeth, sulphuric acid and peroxide of sodium in the treatment of, by C. T. Van Woert, M.D.S., Brooklyn, N.Y....	...	...	237
Puzey, Chauncy, F.R.C.S.Eng., epithelioma of the tongue in woman	...	...	241
QUESTION, the chloroform	...	...	649
REED, C. S., L.D.S.Eng., plastic filling materials for combination	...	...	7
Recent investigations into the constitution of teeth, Dr. Black's, by Charles S. Tomes, M.A., F.R.S.	...	...	404
„ prosecutions, the	...	...	369
Recovery of fees, action for	...	...	31, 214, 332
Reflection of pain, on the, by one nerve ending to another, by T. Sydney Short, M.D.	...	...	14
Regulating chloroform inhaler, a	...	...	38
Relative loss from all causes of the different permanent teeth, some statistics showing the, by J. W. Pare and Herbert Wallis...	...	...	115
„ penetrating power of coagulants, by James Truman, Philadelphia, Pa.	...	...	174
Renshaw, I., L.D.S.I., on a method of making seamless gold crowns	...	...	613
„ „ what the British Dental Association has done for the dental profession	...	...	554
Replantation, by Frank Harrison, M.R.C.S., L.D.S. Sheffield	...	...	456
Report, Irish Branch	...	...	266
„ of the Eastern Counties Branch	...	...	400
„ „ Journal and Finance Committee of the Representative Board	...	...	69
„ Secretary's at the Annual General Meeting	...	...	517
„ Treasurer's „ „	...	...	516

REPORTS OF SOCIETIES AND OTHER MEETINGS:—

Annual Dinner of the Odonto-Chirurgical Society of Scotland	...	225
Birmingham Dental Hospital	...	35
Brighton Dental Hospital	...	111
Devon and Exeter Dental Hospital	...	226
Edinburgh Dental Hospital	...	113
" " School	...	495
" " Students' Society	...	780
General Medical Council	...	334, 763
Glasgow Dental Hospital	...	227
Liverpool Dental Hospital	...	112
London Dental Hospital	...	222, 492
" " " past and present students' dinner	...	781
National Dental Hospital	...	224, 779
Newcastle Dental Hospital	...	286
Opening of the New Dental Hospital and School, Edinburgh	...	34
Students' Society of the London Dental Hospital	...	223, 343
The Odontological Society of Great Britain	34, 96, 110, 163, 216, 282, 343, 415, 708, 770	
Victoria Dental Hospital	...	169
Reports, the Annual	...	585
Representative Board, election of ten members of the	...	314
" " meetings of	68, 309, 510,	654
" " report of the Journal and Finance Committee	...	69
Review of dentistry, world's history and, by Herman Lennmalm, D.D.S.	...	359
REVIEWS AND NOTICES OF BOOKS:—		
Dental materia medica and therapeutics	...	783
Dental surgeon's daily diary and appointment book	...	786
Dental microscopy, by A. Hopewell Smith	...	357
General surgery and pathology for dentists, by Edmund W. Roughton	...	358
Helps in sickness and in health, by Henry C. Burdett	...	243
The anatomy and pathology of the teeth, by C. F. W. Bödecker, D.D.S., M.D.S.	...	49
Transactions of the American Dental Association	...	358
Transactions of the World's Columbian Dental Congress, by A. W. Harlan, M.D., D.D.S., and Louis Ottofy, D.D.S. Chicago	...	243
Vulcanite Work, by Harry Rose, L.D.S., R.C.S.E.	...	244
Utilité de la photographie dans les recherches d'histologie et de bacteriologie	...	782
World's history and review of dentistry, by Herman Lennmalm, D.D.S.	...	359
Roaldes, A. W. de, M.D., New Orleans, a case of compound follicular odontome, invading the right antrum of Highmore, and obstructing the corresponding nasal fossa...	...	170
Robbins, C., L.D.S.Eng., extracts from essays on Chinese dentistry, by A. M. H., communicated through	...	26
Robbins, C., L.D.S.Eng., on the use of crystal mat gold	...	74
Rose, Frederick, L.D.S.Eng., the ethical status of the dental profession, by	...	158

Rose, Harry, L.D.S., R.C.S.E., vulcanite work	244
Roughton, Edmund W., general surgery and pathology for dentists ...	358
Rubefaciants and vesicants, by A. W. Harlan, M.D., D.D.S. ...	352
Rycroft and Browning, the British Dental Association v. ...	408
Rymer, J. F., M.R.C.S., L.D.S., D.D.S., an abnormal premolar ...	161
SARCOMATA plexiform of the palate and velum palati	292
Science and dental surgery, by J. Humphreys, L.D.S.I., F.L.S. ...	593
Scotland, annual dinner of the Odonto-Chirurgical Society of... ..	225
Scottish Branch	319
Seamless gold crowns, on a method of making, by I. Renshaw, L.D.S.I.	613
Secretary's report at Annual General Meeting	517
Severe trigeminal neuralgia due to nasal disease, two cases of, by M. P. Mayo Collier, M.S.Lond., F.R.C.S.Eng.	640
Short, T. Sydney, M.D., on the reflection of pain from one nerve ending to another	14
Simple contrivance for administering air in combination with nitrous oxide gas, a, by C. Carter Braine, F.R.C.S.	208
Sir John and Lady Tomes' golden wedding gift fund	197
Sir John Tomes	433
Smith, A. Hopewell, dental microscopy	357
" L.R.C.P.Lond., M.R.C.S., L.D.S.Eng., on malignant disease of the peridental membrane	578
So-called green stain, the classification of, by W. C. Barrett, M.D., D.D.S.Buffalo, N.Y.	636
Sodium, peroxide of, sulphuric acid and, in the treatment of pulpless teeth, by F. T. Van Woert, M.D.S., Brooklyn, N.Y.	237
Solila crystal mat gold, gold filling with Dr. de Trey's (of Basle), by J. Charters Birch, L.D.S., Leeds	615
Some ethical considerations in relation to dental practice, by J. T. Craig, L.D.S.Edin.	138
Some methods in practice, by R. P. Lennox, Cambridge	574
Southern Counties Branch 6, 81, 198, 262, 323, 394, 589,	658
" " " annual meeting	394
" " " " " inaugural address	396
" " " " " valedictory,	395
Special appeal, the Benevolent Fund of the British Dental Association	82
Statistics, some, showing the relative loss from all causes of the different permanent teeth, by J. W. Pare and Herbert Wallis	115
Status of the dental profession, the ethical, by Frederick Rose, L.D.S.Eng.	158
Status of the dental profession, the ethical, by Thomas Gaddes, M.A., &c., U.S.A., L.D.S.Eng. and Edin.	154
Steel crown dies, a method of making, by Frank B. Norris	180
Stomatitis, chronic, followed by death	293
Students' Society of the London Dental Hospital	223, 343
Sulphuric acid and peroxide of sodium in the treatment of pulpless teeth, by F. T. Van Woert, M.D.S., Brooklyn, N.Y.... ..	237

	PAGE
Valedictory address at the Southern Counties Branch ...	395
,, ,, ' by C. S. Tomes, F.R.S., M.A., M.R.C.S., L.D.S.Eng. ...	550
Vesicants, rubefacients and, by A. W. Harlan, M.D., D.D.S. ...	352
Victoria Dental Hospital ...	169
Vulcanite work, by Harry Rose, L.D.S., R.C.S.E. ...	244
 WALLIS, HERBERT and J. W. Pare, some statistics showing the relative loss from all causes of the different permanent teeth ...	115
Wanklyn, J. Alfred, note on the probable existence of nitrous oxide in the air ...	47
Wax and its impurities, by B. S. Proctor ...	178
Webb v. Williams ...	32
Western Counties Branch ... 138, 198, 267, 318, 403, 445, 588, 657	
,, ,, ,, annual meeting ...	445
,, ,, ,, ,, ,, inaugural address ...	447
West of Scotland ,, 137, 319	
What the British Dental Association has done for the dental profession, by I. Renshaw, L.D.S.I. ...	554
,, ,, ,, ,, ought to do for our profession, by T. Gaddes, M.D., U.S.A., L.D.S. Eng. and Edin. ...	562
Williamson, W. H., M.D., L.D.S., glass inlaying ...	616
Woert, F. T. Van, M.D.S. Brooklyn, N.Y., sulphuric acid and peroxide of sodium in the treatment of pulpless teeth ...	237
Women, epithelioma of the tongue in, by Chauncy Puzey, F.R.C.S.Eng.	241
World's Columbian Dental Congress, transactions of the, by A. W. Harlan, M.D., D.D.S., and Louis Ottofy, D.D.S. Chicago...	243
,, History and Review of Dentistry, by Herman Lennmalm, D.D.S.	359
Wounds, preparations of blood-serum as dressings for ...	177

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

14969

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 1. JANUARY 15, 1895. Vol. XVI.

1894.

THE horns of the new moon, it has been said, are very convenient for pegs whereon to hang good resolutions, and the dawning of a new year seems a fit occasion for some such exercise, but it has been found by the wise directors of this journal to be quite as useful, and a great deal safer, to review the year that is gone rather than to promise for that which is to come; to see how far our hopes of a twelvemonth ago have been fulfilled, and perhaps to draw a few lessons from our failures.

One of the most promising features to us dentists in the year 1894, is that it has seen a great awakening of public interest in the progress of our profession. We always knew that our cause was good, and the medical press soon gave evidence that they understood and believed in it, but the lay public, the people for whom we work, have shown very plainly of late that we interest them, and that it is worth

while for the great daily organs of public opinion to take count of our doings. The recent discussion in the pages of the *Pall Mall Gazette* is an unmistakable sign of the times, for the pages of an influential evening paper are not open to any but important topics, and the fact that they argue about us speaks volumes for our progress.

Careful readers of this journal will not have failed to note with satisfaction that the General Medical Council has been keenly alive to our affairs during the past year. The College of Surgeons in Ireland have, under the direction of the central body, reinstated the apprenticeship clause in their curriculum—a great result, and very gratifying to those who have worked so hard to attain it—while the question of advertising has received considerable attention from the Council, the result of which it is perhaps too early to prognosticate. The question of direct dental representation on the Council itself has been also considered, but a legal difficulty as to the power of the Council of themselves to make the appointment remains still to be cleared up. The refusal to register some candidates on the strength of Harvard or Michigan diplomas is evidence that the Council are prepared to abide by their recent resolution, while last, but not least, the appointment of Mr. Charles Tomes as a visitor to the various dental examinations shows that we are not inclined, while demanding much of others, to allow our own standard of professional requirements to fall.

Turning to the work of the Association, much has been done that is in every way satisfactory. The meeting at Newcastle was in all respects a success. To many members, however, the most gratifying work has been the prosecutions undertaken in the early part of the year with such great success—the feature of all being undoubtedly the fresh light thrown upon the interpretation of a clause. This has always been the aim of the executive in each

fresh legal case that it has undertaken as a body, and the wisdom of this course has been sufficiently warranted by events.

The chief social event of the year was the golden wedding of our old leader, Sir John Tomes, and the formation of a triennial prize to be associated with his name. Meanwhile the National Dental Hospital has settled down in its new and commodious home, and what is more, it has done so under the auspices of royalty, the Duke of York himself presiding at the opening festival; nor was this the only occasion on which royalty honoured our gatherings, for the Duke and Duchess of Coburg opened the picture exhibition for the Building Fund of the Dental Hospital of London in person.

To turn to our record of scientific work. A prominent place is claimed by the all-absorbing subject of anæsthetics. The combination of gas and oxygen as an anæsthetic combination has made great progress; coryl, a local anæsthetic, has gained a certain amount of ground, while a controversy has taken place upon the question of the discovery of nitrous oxide. Unfortunately our own columns have been too full of reports of deaths from anæsthetics; these, however, are still quite fresh in the minds of our readers.

In literature the most noticeable points are the productions of fresh editions of those well-known text books—Tomes' "Dental Anatomy," and Heath's "Injuries and Diseases of the Jaw." In America, Bodecker has produced a work upon "Dental Pathology and Anatomy," a criticism of which will be found in this issue.

Dental science has been enriched by a few papers, the most noticeable of which was probably that by Woodward upon the succession and genesis of mammalian teeth.

Such are a few of the pictures that seem most prominent to our memories from the panorama of 1894. We trust

that when the time comes to record the history of the year upon which we are now entering, we shall have fresh advances to record, and to all of our readers we venture to wish the time-honoured greeting of a happy and prosperous New Year.

"Nasmyth Membrane."

AMONG the unsettled problems of dental histology remains the nature and homologies of Nasmyth's membrane, and an interesting, though as its author is the first to admit, not fully conclusive contribution to the subject appears elsewhere in these pages.

The one thing on which Mr. Paul strongly insists is that Nasmyth's membrane is of epithelial nature; he has by various staining methods and without difficulty brought out an appearance exactly like flattened epithelial cells in which the nuclei remain quite distinct.

Every one is familiar with the fact that Nasmyth's membrane shows a reticulated pattern, but previous observers have failed to see the nuclei which he figures, and the explanation has been offered that this pattern has been produced by impressions of the ends of the prisms of the enamel. But Mr. Paul rejects this interpretation on the very good ground that the reticulate markings are ten times too large to have been produced in this way, and he prefers to consider it as being formed by the external epithelium of the enamel organ; but curiously enough, as he has made use of the argument of their size to reject another hypothesis, he does not tell us whether they do correspond in size with the cells of that external epithelium. He believes—though this rests so far on a single observation—that he has seen traces of it where on that supposition it ought to be found, namely, between the enamel and the

thick cementum of herbivora ; this, if confirmed by further observations, would go far to settle the whole question.

Another point of much interest is the discovery that the membrane seems to consist of two layers, the epithelial one already alluded to, and a structureless film like a basement membrane which lies between the epithelial layer and the enamel prisms.

Equally interesting is the observation that the tooth sac at an uncertain stage was quite free from the contained tooth, but later on it became adherent, though it could still be quite easily stripped off ; in its free stage it had an epithelial lining, but when stripped off, in its adherent stage, it had none ; either it was gone wholly, or else it had stuck to the surface of the enamel, where, indeed, Mr. Paul was able to find similar cells by scraping the surface of the enamel.

If all these observations come to be confirmed, no doubt will any longer remain that Nasmyth's membrane is a product of the external epithelium of the enamel organ, and the writer, who advances his views with true scientific caution and regard for the opinions of others, goes on to show that this view is quite reconcilable with all the recorded observations, none of which really contradict it, though they are used in support of different theories as to its nature and origin. The paper deserves most careful perusal by all who are interested in such inquiries.

AN alloy consisting of ninety-five parts of tin and five parts of copper, is stated by Mr. M. F. Walter to adhere so tenaciously to glass that it may be employed as a solder to join the ends of glass tubes. It is obtained by adding the copper to the tin previously melted, agitating with a wooden stirrer, casting or granulating and then remelting. It melts at about 360° C. The alloy may be rendered either softer or harder, or more or less easily fusible, by adding from $\frac{1}{2}$ to 1 per cent. of lead or zinc.

ASSOCIATION INTELLIGENCE.

LIST OF MEMBERS.—The List of Members of the Association will be issued early next month, the returns from all the Branches not yet having come to hand.

Central Counties Branch.

THE first General Meeting of the Session was held at the Dental Hospital, Newhall Street, on November 22, under the presidency of Mr. F. W. Richards, when about twenty members were present. Tea was served at six o'clock.

Mr. J. F. Apperson, of Birmingham, was elected a member of the British Dental Association, and also of the Central Counties Branch.

Mr. J. T. CRAIG read a very interesting paper on "Some Ethical Considerations in Connection with Dental Surgery,"* which was discussed by several members. This was followed by a demonstration in the preparation and charging of diamond points and discs, by Mr. E. A. Vickery, of Coventry.

Metropolitan Branch.

THE Annual General Meeting will be held on Wednesday, the 23rd inst., at 40, Leicester Square, at 8 p.m.

Agenda: Read minutes, treasurer's report, election of president-elect for 1895, election of hon. treasurer and secretary, nomination and election of four members of Council, casual communications, retiring President's address, president-elect takes the chair.

Any eligible Member of the Branch may be nominated at the Meeting for Election to the Council. The retiring members are: Messrs. John Ackery, Harry Rose, C. S. Tones, F.R.S., and Willoughby Weiss. These gentlemen are not eligible for election until 1896.

SIDNEY SPOKES, *Hon. Sec.*

Southern Counties Branch.

THE next Meeting will be held at the White Hart Hotel, Reigate, on Saturday, January 26, 1895.

1.30—Mr. Gabell kindly invites the President and Council to lunch with him at Meadowcroft, Redhill. 2.45.—Council Meeting. 3.15.—General Meeting. Papers—"Antiseptics in Dental Surgery," by F.

* This paper will be published as an Original Communication.

H. Ellwood, L.D.S.I. (Redhill); "Alveolar Abscess," by E. F. Gabell, D.M.D.Harv. (Redhill); Casual Communications. 6.—Dinner (tickets, 4s. 6d. each).

N.B.—Trains leave Brighton at 1.45, and Victoria at 2.3, arriving at Redhill Junction at 2.41 and 2.53 respectively. Omnibuses will meet these trains for as many as send their names to the Hon. Secretary (fare 6d.). Gentlemen intending to stay for the dinner are requested for the sake of their own comfort to inform the Hon. Secretary on or before January 21.

FRANK V. RICHARDSON, *Hon. Sec*

1, Sillwood Road, Brighton.

ORIGINAL COMMUNICATIONS.

Plastic Filling Materials in Combination.*

By C. S. REED, L.D.S.Eng.

ONE of the disadvantages under which a young member of our profession labours, is the fact that he cannot say, from practical experience, what success he has attained to in his work, when tested by the severe and only true trial of time. Although one has a feeling that fillings which have successfully withstood the various adverse agencies at work in the mouth for twelve months will probably last for an indefinite period, yet that idea is only based on a sort of speculation, and may be wrong in the end. As a young man, therefore, I cannot bring before you a long record of cases, successful or otherwise, to support my statements; I can only present to you a few ideas, the result of thought and observation on my own part, and trust to hear, from those of a more extended experience, what they have judged to be the real truth by an observation of work done, by themselves or others, many years ago, and which has been submitted to the numerous and varying conditions under which such work has to remain in a patient's mouth. By our failures we learn; if we never had failures we should never need to learn; we should have reached a state of perfection which I fear is still in the far distant future. To my mind, therefore,

* A Paper read at a meeting of the Southern Counties Branch, Canterbury, Oct. 27, 1894.

there is no disgrace in recording a failure if we are prepared to examine that failure, to endeavour if possible to discover its cause, and to determine to modify, to the best of our ability, the conditions which lead to such failures. We shall thus pave the way to an abiding success.

After reading some articles one is almost inclined to believe that if all decayed teeth were filled with gold the acme of perfection would be reached, and that, having found means of substituting gold for baser materials in our fillings, we shall not only have gained the ancient alchemist's desideratum of a process which turns everything into gold, but also the elixir of life for those fillings, which makes them to last for ever.

Unfortunately we have found beautiful gold fillings, with all their splendour, less effective in saving teeth than the lowly osteo or modest gutta-percha, and the reputation of many a quack of the worst description has been enhanced because his gutta-percha or osteo fillings, rapidly and roughly inserted, have proved more serviceable than elaborate fillings, put in with great labour and expenditure of time, by a more respectable practitioner. Strikingly forcible is the remark that more skill is required in selecting a stopping material that will exactly meet the requirements of each particular cavity, than in the insertion of the stopping itself. Of course the correct thing is to be careful in every respect. If we had in gold a filling material that supplied all the requirements of a perfect stopping, there would still be reasons for not using it exclusively, which we, considered both as men and as dentists, cannot afford to neglect.

It is impossible that all may be engaged entirely by patients who are wealthy enough to pay for expensive gold work. There are many patients who refuse to undergo the tedium of such work; and there are others who are physically unfitted for doing so. Others, again, cannot spare the time necessary for the accomplishment of gold work. All these classes of patients are worthy of and demand consideration.

It is no crime to be poor, or weak, when such a state is unavoidable, and if a patient can only afford to purchase a small portion of our time, it is but just and fair that we should give him, in that time, the best of our ability and experience. To refuse such to him because of his poverty

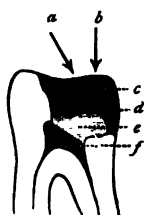
would indeed be a crime on our part. Yet I cannot help feeling that if a proportionate amount of the care given to a gold filling taking two hours to complete was bestowed on a plastic filling taking half an hour, we should increase the effectiveness of some of our baser filling materials. I must admit that there is no one plastic filling material which possesses, for the majority of cavities, qualities equal to those of gold, but I am persuaded that by a judicious combination of the plastic materials at hand a filling may result which even surpasses gold for general effectiveness, though inferior to it in certain classes of cavities.

Whilst much has been written concerning amalgams, some about osteoplastics, and more respecting gold fillings, I have not been able to find many references to combinations of amalgam with osteoplastics. Mr. F. A. Bellamy, L.D.S., wrote on this subject in the *British Journal of Dental Science*, of February, 1887, and gave an account of the methods he was then employing. Later Mr. Sidney Wormald, L.D.S., gave a paper treating of this matter, which appeared in the *Journal of this Association*. Still more recently, Mr. T. Leon Williams, L.D.S., D.D.S., contributed to Messrs. Ash's Circular an account of a series of experiments which he has conducted on osteoplastic materials, which has resulted in the appearance of a new cement under the title of the *Dirigo Enamel Cement*. This he commends for use in combination with amalgam. From time to time, also, there have been other jottings, more in the form of hints than connected papers on the subject, appearing in the various journals.

The filling material which adapts itself most satisfactorily to the walls of the cavity is undoubtedly the osteoplastic. Not only is it readily forced into all parts of the cavity, but it adheres to the walls when hard, and thus must act in a measure as a support to the weakened tooth substance. It is disappointing, however, both to operator and patient, to find in the course of time, often a very short course, that the filling is dissolving away, and that what at first seemed a very satisfactory reproduction of the lost portion of the tooth is rapidly assuming a disagreeable, and at times to the patient, a very alarming appearance. We have in amalgam a material which is readily adapted to the walls of a cavity, but it has no adhesive properties. It shrinks after hardening,

and thus a space, more or less minute, is left between the walls of the cavity and the stopping. This not only destroys the adaptation of the plug to the cavity, but renders the plug a source of danger to the weakened walls. The minute space allows any pressure acting on the exterior of the tooth to expend its force on the weakened wall, and thus we often see amalgam fillings spoilt by the tooth substance breaking away at the edges. It could be obviated by cutting away the weak portion at first, but in many cases that would mean loss of the major part of the tooth we wish to preserve.

**A METHOD SUGGESTED FOR OBTAINING MAXIMUM OF STRENGTH
COMBINED WITH MAXIMUM OF OSTEO BODY TO FILLING.**



Longitudinal Section.

Section of tooth *after* being filled in the manner described in this paper.

(a, b) Probable lines of force. (c) Outer layer of amalgam. (d) Intermediate layer of combined osteo and amalgam. (e) Body of osteo. (f) Gutta-percha filling root canals.



Transverse Section.

A large mass of amalgam is always liable to considerable change in shape after insertion; its surface discolours in a greater or less degree, and the tooth substance is stained by contact with it. An amalgam which stains least, alters its shape most. Those which are fairly reliable as tooth savers usually discolour the tooth very much, and so are most undesirable for front teeth. On the other hand, an osteoplastic filling retains its effectiveness, as a tooth saver, until it is worn to merely a thin lining of the cavity in which it was placed. Even in shallow cavities without retaining points such a filling will retain its preservative powers until the continuity of its surface becomes broken, and the tooth substance, which it formerly protected, is again exposed to the action of the acids and micro-organisms of the mouth. I have seen instances when, even then, a ring of cement has

remained adhering to the tooth around the exposed spot, and the re-commencing disease has been confined to the place exposed only. Amalgams suffer in a slight degree only from attrition or solution, and may be seen, after many years' service, but little worn although palpably altered in shape, and showing a space at the margins of the cavity. What we need is either an amalgam with a good colour, adhesiveness, and freedom from alteration in shape and staining of tooth substance after insertion, or an osteoplastic which will neither dissolve nor wear away, whilst retaining the valuable properties of the present oxyphosphates. Such a filling material we have not yet discovered. In endeavouring to approach as near as possible to it, however, there has been a movement in the direction of combinations which shall retain the good qualities of both materials, whilst at the same minimising the disadvantages of each. Some writers have advocated lining the cavities with a layer of osteo previous to inserting the amalgam. Mr. Bellamy's plan was to mix together about equal portions of amalgam and osteo in their plastic condition, insert the mass thus formed, and finish off the surface by a veneer of simple amalgam. Mr. Wormald's plan was to simply fill the cavity with a similar kind of mixture without any surface finishing. I have adopted a slightly modified method, which also has the disadvantage of being more complicated.

The cavity having been prepared usually as for an ordinary amalgam filling, I mix a quantity of osteo and a quantity of amalgam separately, that is, the metallic powder with mercury, and the oxide of zinc with the phosphoric acid. I prefer an oxyphosphate that sets slowly, as the process requires a little more time than a simple filling. I then take small equal portions of the two plastic masses, and thoroughly combine the two by vigorous working with the spatula. The cavity being carefully dried by hot air or other means, I quickly introduce sufficient of the simple cement to almost fill it. On to the surface of this I place as much of the combination as will entirely cover it with a thin layer, but at the same time leave enough space for the reception of a strong layer of simple amalgam. With an instrument I rapidly clear the edges of the cavity from all traces of cement or combination, and then burnish into the still soft mass the layer of

amalgam alone, so that it comes in contact with the edges at all parts. It is necessary that all moisture be excluded during the entire process. When hard, the result is a filling with a body of unshrinking, non-skinning, adhesive oxyphosphate, to the surface of which is strongly attached a veneer of wear-resisting amalgam, by means of an intervening layer of an intimate mixture of the two. The chief object in view is to have a body of osteo which will completely counteract the retraction of the amalgam from the walls of the cavity. A thin lining cannot very well accomplish that object.

There are several reasons for preferring this plan to that of placing the combined substances directly on to the dentine. It absolutely prevents all discolouration or darkening of the tooth substance. It can be used with perfect safety for front teeth. When the combination is introduced immediately into the dentine there is present a certain degree of darkening, though less than in the case of amalgam used alone. In cases of near approach to the nerve the simple cement is a better non-conductor of heat or cold than the combination; it may be made even more tolerable to the teeth by the admixture of some sedative, such as oil of cloves, which, if not too large in quantity, does not affect the setting or adhesiveness of the oxyphosphate. In shallow cavities, however, where such considerations are not of great importance, the mixture may be applied directly, and the amalgam burnished on to it; it adheres very firmly to the tooth substance. In large cavities between the front teeth I usually cut away the lingual surface freely, leaving as much of the labial wall as possible, even though it is merely enamel of the frailest description. When the combination filling is inserted, the osteo, by its adhesive properties, supports wonderfully, and does not give any objectionable dark appearance to the semi-transparent enamel. The amalgam effectually resists the wear of mastication, which is present on the lingual surface. If the labial wall is already or accidentally broken away, the amalgam covering may be made to terminate at a point between the teeth where it cannot be seen, the front part consisting of simple cement only. It thus becomes quite unobjectionable, whilst the surface exposed to solvent action is considerably reduced.

My experience tends to show that amalgams so used in

combination keep a better colour on their own surface than when inserted alone, in the old way, so that for those who do not object to the silver colour of better class amalgams, the metal may be brought forward on the labial surface without any ill effects. For dead teeth this method has also the advantage of almost complete freedom from discolouration. It has been said that by filling the bulk of the space with osteo, much of the integral strength of the filling is lost. This must be true to a certain extent ; but by a little ingenuity in shaping the cavity the amalgam covering may be so disposed as to retain great strength. I have employed this method for some years now, but I have never seen an instance where the strength of the filling has been insufficient to do the work required of it, although many have been extensively contoured. I keep particulars of all fillings I put in, and I have been delighted with the appearance of those treated in this way, which I have had an opportunity of seeing again. Indeed I have been particularly struck by the fact that, whilst many of the simple amalgams done at the same time have shown the usual signs of weakness, I have not noticed anything of the kind about the combination fillings. To those who desire to do their work without labour this method will not commend itself. It cannot be used as a loophole through which to escape from thorough preparation of cavities previous to insertion of a filling ; it requires, if anything, more manipulative skill than the old method, and it certainly takes a little more time. Inasmuch as a cavity is imperfectly prepared, insomuch will the efficiency of this method, as of every other, be impaired. Where thorough preparation, however, is from some cause impracticable, I think we may safely assert that these combination fillings will certainly be more serviceable than any others. For those who do not object to a little more trouble and expenditure of time in order to get a slightly more reliable result, I believe the method I have attempted to describe is worthy of consideration. My object in writing this paper was rather to elicit the opinion or experience of others on this subject, than to exhibit any ability on my part to say something striking about it. I trust that we may hear the opinions freely stated in regard to it this afternoon.

On the Reflection of Pain from one Nerve Ending to Another.*

By T. SYDNEY SHORT, M.D.

PHYSICIAN TO THE INFIRMARY, ASSISTANT PHYSICIAN TO THE GENERAL HOSPITAL, AND ANÆSTHETIST TO THE DENTAL HOSPITAL, BIRMINGHAM.

THE reflection of pain from the seat of its origin to the position in which it is felt has always been a stumbling-block to the student, and is frequently a matter of perplexity to the practitioner. It occurred to me that a few words on the subject would be of interest to the members of this Society ; and I propose to-night to say something first of all about pain as a symptom, then to treat of the special form of pain to which the term neuralgia is given, and finally to discuss the causes of that particular neuralgia affecting the trifacial nerve, obviously so nearly connected with your future work.

Nature of Pain and Conditions affecting it.—By pain we mean an unwonted stimulus of a nerve. The variation in the stimulus is usually in the direction of a greater intensity, for example, when a simple tactile impression is increased until it becomes painful. But on the other hand the intensity may be less, as in cases where light fingering causes more pain than firm handling. Again, the intensity of the stimulus remaining the same, the variation may be in the rate at which it operates in a given time. In each of these cases the difference in the result depends on some alteration in the quality or quantity of the stimulus. In some cases, however, the condition of the nerve may so modify its conductivity that without any alteration in the stimulus the result may still be different. This is a very important point and is worth a little discussion ; for it practically means that different persons bear pain with different degrees of appreciation. Fortitude towards pain may be inherited ; cowards in a physical sense may be born so. Such courage may be acquired or lost ; it may be retained only to vary from time to time. Occasionally it is unnatural, and the pluckiest girl with regard to pain that I ever met was a poor hysterical subject who used to attend at regular intervals, for the purpose of having

* A paper read to the Birmingham Dental Students' Society, November 29, 1894.

pieces of glass removed from her arm, at the hospital where I spent my novitiate in London. My chief, one of the ablest surgeons in London, told us that the girl originally fell on some glass. Her arm being badly cut, she was brought to his clinique, where the wound was thoroughly cleansed of all bits so that it healed satisfactorily. This was some months before I saw her, and the case was thought to be done with. Judge of the surgeon's surprise when the girl came up some months afterwards with several pieces of glass under the skin in the neighbourhood of the scar left by the wound. These were really too big for anyone to have missed; and this time they were removed without an anæsthetic. Periodically that girl would come and ask to have removed pieces of glass which were obviously pushed in by her on the quiet—although this was of course obstinately denied. She never flinched at the operations, and it certainly was my chief's opinion that she found pleasure in the pain. He thought she liked the cutting, and the students around to see it done. In one of Hoffmann's tales he mentions the case of a woman in the hospital of Würzburg who, he says, "regardless of the frightful torture she endured, bored pieces of glass and needles into her lancet wounds, merely to astonish her doctor at the strangeness of the substances to be found within her."*

Perverted sensation is not uncommon in the insane, in hysteria, and in those people who emulate ostriches and such like creatures, more famous for their strength of digestion than for their powers of reasoning. I should have included these stomachic wonders under the term insane, but as they do it for a living I suppose they may be allowed to claim keen competition as an excuse.

The state of the health, or, in other words, the condition of the blood, affects the conductivity of the nerves. A watery condition of the blood, as we see it in anæmia, is a constant cause of nerve pain; and without waiting for any particular stimulus the half-starved nerve calls out on its own initiative for better food, and its cry is neuralgia. Sometimes the nerves are affected by poisons circulating in the blood. In poisoning by alcohol and lead the nerves undergo marked changes and produce characteristic results. Akin to actual

* "Serapion Brethren," vol. i. p. 287.

poisoning are conditions such as diabetes, gout, syphilis and malaria, all of which may be associated with nerve lesions. Pain, then, may vary from an outside cause, *i.e.*, an alteration in the stimulus, or from an outside cause, *i.e.*, an alteration in the nerve tissue itself.

When anyone treads on your toe it is the brain that really feels the pain and refers the sensation to the extremity. The brain is so used to referring it correctly that if the leg be removed and the end of the nerve be irritated in the scar, the brain still feels the pain as if it were in the toe, which by that time is far beyond the reach of pain; and for years afterwards the phantom leg and foot may live with the owner—like the ghost of his better self, and quite as unwelcome. It does occasionally happen that the brain refers incorrectly. It places the pain at another end of the nerve and at some distance from the actual irritation. This is what we call “reflected pain,” and now that I have led up to it gradually I shall deal with it more fully.

Reflection of Stimuli.—It is possible for a severe stimulation of a nerve terminal to be felt as pain at any other nerve terminal which is in communication. It is probable when the pathway between the terminals is very direct; but it is possible even when the route is circuitous. The simplest way to deal with the matter is to consider that every single nerve terminal is connected with every other nerve terminal in the body. This is not merely a supposition; they are so connected. It explains some phenomena which appear at first sight to be inexplicable. For example, the frontal pain that some people suffer after eating ices; or, again, the curious feelings that may occur when the bladder is emptied after being unduly strained from overfulness. Feelings which take the form of a slight shiver in some, and in others the sensation of an icy cold twinge through all the teeth. What we call shock is a very serious form of reflex stimulation. Here it is not so much pain that is produced as weakness of the heart's action, associated with a feeling of faintness, vomiting, and sweating. A severe blow on the stomach may cause all of these signs; and if you subject a frog to such a stimulus you may not only weaken its heart but you may stop it altogether. This extreme instance of reflected stimulus is usually called “Goltz's experiment,” from the name of the man who dis-

covered that a strong stimulation of the end of the vagus in the bowels caused the other end to inhibit the action of the heart. With the handle of a scalpel he struck a sharp blow on the belly of a frog, and its croaking days were over, past recall. There are many instances of reflected pain less lethal in effect than that of shock. The joints of the body supply us with some well-known examples. The articulating surfaces of all the joints are furnished with nerve fibres, and the nerve trunk supplying them gives filaments elsewhere in addition. Thus the nerve trunk that supplies the hip-joint passes down the thigh, and in its course gives off several filaments which ramify beneath the skin over the inner side of the knee. In commencing hip-joint disease the patient often complains of great pain in the region of the knee because the irritation is reflected there. This is so common that in all cases where pain is complained of without obvious cause in the neighbourhood of the knee we always examine the hip as a matter of routine. A man I know fell on his elbow and got inflammation of the joint in consequence. A considerable amount of stiffness remained, so that any attempt at passive movement caused him pain, even when the joint had been free from inflammation for some weeks. This pain was not felt by him in the elbow at all; it was over the front of the wrist. The fibres of the ulnar nerve ramifying beneath the articular cartilages inside the elbow joint, reflected the pain to the palmar branch of the same nerve. As you may remember, this branch is given off by the nerve at about the middle of the forearm, and following the line of the ulnar artery supplies the skin over the anterior aspect of the wrist and palm. This example is only a variation of the funny-bone joke, where a sharp blow or sudden pressure over the ulnar nerve, just on the inner side of the point of the elbow, causes a tingling all down the ulnar side of the arm, wrist, and little finger. Again, irritation of the nerves of the kidney causes pain in the testicle of the same side; and pain at the end of the penis is produced by stone in the bladder. Uterine troubles may be associated with aching beneath the left breast; and the fact that disorders of the liver often cause pain between the shoulders is well known. To come nearer home; the irritation produced by a decayed or impacted tooth may cause pain over any part of the terminals of the fifth nerve; and not

only there, but along the neck and down the arm, as in that special form of nerve pain known as cervico-brachial neuralgia. Pain felt and complained of in the voice-box, especially by singers, is not uncommonly due to a granulation or some such tender body, really situated much higher up in the throat; perhaps in the posterior wall of the pharynx or behind one of the tonsils. The wall of the stomach is occasionally the seat of a small round ulcer, and the pain produced by this inflammatory focus may fail altogether to draw attention to the stomach. In many cases it is in the back that the pain is really felt; and several patients have come under my notice in whom the bones of the spine have been suspected of developing some disease, when the actual cause of the pain has been an ulcer of the stomach.

There is one other instance of reflected pain that I will mention because it just makes my list up to a dozen, and because it can generally be exemplified without calling for the existence of any abnormal condition. Of the nerves passing between the ribs from the spinal cord, the second one gives off a branch, the intercosto-humeral, which passes through the fascia of the axilla, and, reaching the inner side of the arm, joins the small internal cutaneous nerve arising from the inner cord of the brachial plexus. This cutaneous nerve, described by Wrisberg and called after his name, supplies the lower third of the arm on the inner and posterior surfaces. If the skin over the side of the chest below the armpit be pinched forcibly, a sharp pain can usually be felt round the inner condyle of the humerus. This reflection of the pain is due to the direct communication between the cutaneous nerves of the chest wall and those ramifying round the inner side of the elbow.

Reflex Muscular Spasm and Vaso-motor Disturbance.—Up to the present I have been speaking about the reflection of a sensation—the sensation of pain. There are, however, several other reflex results which may be produced by the irritation of a nerve terminal, and they may either accompany the pain or they may replace it. The vagus nerve which supplies the lungs furnishes early in its course a small branch to the ear, and the irritation caused by disease of the bone near this nerve in the aural meatus very frequently produces a reflex cough. The vagus nerve also supplies the stomach, and

here again irritation may cause a cough—the well-known stomach cough of children. General muscular spasm is not at all uncommon as a reflex effect, and a familiar example is the convulsive attack brought about in young people by the presence of worms in the alimentary canal. Maudesley quotes a case of Brown-Séquard's, where irritation of the foot, thought to have been caused by a sharp bit of gravel, produced convulsive attacks in a boy whenever he tried to stand. Removal of the irritation cured the attacks.* A less severe form of muscular spasm is frequently seen in the twitching of the muscles of the face associated with neuralgia and perhaps originally caused by bad teeth. Torticollis or wry-neck, due to irregular spasm of the neck muscles, may be caused in the same way, and the following case illustrates well the contraction of the muscles of the jaw due to reflex irritation.

Mrs. E. B., aged 36, came to see me in September from Kingsbury. She said that she had suffered from toothache and pains in the jaws for years. About twelve months ago she began to suffer from severe neuralgia in the back of the head, and since April of this year, whenever the pain has been very severe, it has been associated with muscular spasm causing lock-jaw. Since the pain moved to the back of her head she has not felt any in the teeth at all—a somewhat surprising fact, considering that a more disreputable lot were never seen, but bearing out what I shall have to say presently on the sequence of neuralgia on toothache. Her husband, who came with her, said that her jaws would set for several hours at a time, and on one occasion for as long as seven. Twice the lower jaw became fixed with the mouth open instead of shut. Under treatment by means of nervine tonics this case has improved considerably, and the spasm only occurs at long intervals and lasts for a comparatively short time.

There are other effects to which I can only briefly refer here in spite of their great interest. Reflex irritation may cause glandular excitement, as in the flow of tears that accompanies neuralgia about the eye. It may also cause redness and swelling of the face, fulness of the eyeball,

* "Physiology of Mind," by Henry Maudesley, M.D., 1876. "Lectures on the Physiology and Pathology of the Central Nervous System," by Dr. Brown-Séquard, 1860.

atrophy of the hair follicles with loss of the hair or a change in its nutrition. Localised patches of grey or white hair are not unusual as a result of recurrent attacks of neuralgia. Two cases lately under my care illustrated some of these points so well that I will briefly relate them.

W. D., aged 66, from Walsall, had suffered general neuralgic pain along the course of the right infra-orbital nerve for four years. Just before he first felt the pain he had inflammation and abscess connected with a tooth in the lower jaw. Soon after this the teeth that he had in the upper jaw fell out one by one, and when I first saw him he had none in the upper jaw and only three remained in the lower. Although the pain that he originally suffered was connected with the lower teeth, the neuralgia had never affected the inferior dental, and was confined to the infra-orbital branch. During the four years the muscles of the affected side of the face twitched when he was in pain, but he thought that whilst the pain gradually increased the twitching became less. The side of the nose and the upper lip were extremely tender to the touch. Resection of the nerve was performed in September, with complete relief up to the present time.

S. C., aged 64, from Rowley Regis. Was first seen in 1890, nearly five years ago, and at that time had suffered for two years from neuralgia of the left infra-orbital nerve. Previously he had had toothache severely, for the relief of which he parted with all his remaining teeth. Section of the nerve was performed in 1890, and for twelve months he was free from pain. It gradually returned in both the supra-orbital and infra-orbital branches, and was as bad as ever when he came to me this summer. In addition to the twitching of the muscles, this man had marked redness over the side of the face, with profuse lachrymation whenever the paroxysms were especially severe. Mr. Lucas, who operated on both these cases for me, told me that the infra-orbital nerve—that is, the nerve that was resected four years ago—had certainly not united in the interval. It seems pretty certain that since the earlier operation a collateral path had been opened up, because sensation to touch was perfect over the area supplied by this nerve. The fact that the patient suffered pain would not alone prove this, for the proximal end of the cut nerve might have been irritated by the scar tissue, as I have explained above.

As a familiar example of disturbed nutrition due to nervous influence, herpes zoster at once suggests itself to the mind. In this skin affection the groups of vesicles are always associated with much pain of a neuralgic character, which may precede the eruption, accompany it, and persist for some days after the sores are healed. The ganglion of the sensory root of the spinal nerve supplying the herpetic area is credited with circulatory changes sufficient to produce this acute inflammation of the skin. Dr. J. Batty Tuke in his *Morison Lectures*, published this year on the *Insanity of Over-exertion of the Brain*, says: "According to Kaposi, the skin affection in herpes zoster appears to depend in many cases on a congested condition of the vessels supplying the ganglion or ganglia of the nerve or nerves supplying the parts affected."*

The following is a good example of herpes following, and apparently due to, contusion of the back and irritation of a spinal nerve. A gentleman who had been fishing in the country had to drive twelve miles in a dog-cart over very bad roads to reach his railway station. The back rail of the seat caused him considerable pain in the lumbar region on account of the incessant jolting. On reaching the station the pain was sufficiently marked to cause pain on stooping. During the night he had severe neuralgic pain all round the right side on a level with the spinous process, which had been concussed during the drive; and on the following morning a crop of herpes zoster broke out along the course of the corresponding nerve.

Reflex vaso-motor disturbances, then, may be summed up as: redness and flushing, sweating, dilatation of vessels (especially seen in the eye), oedema and increase in the secretions from the nasal, salivary and lachrymal glands. As trophic disturbances let me mention erythema, periosteal thickening, loss of hair, local greyness, atrophy of the skin and nails, herpetiform vesicles and acute bed-sores.

A Theory of Neuralgia.—Since the trifacial nerve will more nearly concern you in your work, I shall take its three branches separately in a few minutes. First of all, however, I want to say something about neuralgic pain generally, and

* *Morison Lectures*, 1894. Kaposi, "Pathologie und Therapie der Hautkrankheiten," third edition.

the manner in which it affects this or any other nerve. At the start off I wish to insist on a line of demarcation being drawn between toothache and neuralgia. Toothache is the pain that is felt from the irritation of the nerve terminals in the tooth due to some abnormal condition of the tooth, and removed when that abnormal condition is removed. Toothache, then, is generally felt in the tooth or in the jaw close to it. Neuralgia, on the other hand, is not necessarily associated with teeth that are painful at the time of its occurrence. It may be, but on the other hand, it may not. Some of the worst cases of neuralgia I have seen have been in patients who had no teeth; and it is not unusual for the pain to remain long after the removal of stumps which may have been quite innocent of all blame so far as their neuralgia-causing properties were concerned. But—and this is an important point—in nearly all cases of facial neuralgia, where no obvious cause, such as debility or anæmia, is present, it will be found that there is a history of toothache extending over a considerable period of time. The pain itself may not have been of a very severe nature, but its duration, as regards time, will generally be noted as having been marked. Observations of this nature have formed the ground work of the hypothesis that long-continued nerve excitations are stored up in the nerve until some appropriate time, when the barrier is removed, setting them free in a crowd to play havoc with the sensory terminals in the brain. This is not by any means a fanciful theory, and it receives support from the following passage quoted by Creighton from the "Elements of Pathology"* of Prof. Rindfleisch:—"There are two great distinguishing marks of nervous symptoms in disease: firstly, their periodicity or intermitting character; and secondly, the apparent disproportion between the intensity of the manifestations and the cause of them. The periodicity is based on the general biological principle of labour and fatigue, of waking and sleeping, of force spent and force recovered. The apparent inadequacy of the cause to the effect arises out of a property of the central nervous system to absorb enormous quantities of ingoing excitations as if they left no trace, while in reality it stores them up in

* "Unconscious Memory in Disease," Charles Creighton, M.D., London, 1886.

the form of potential energy. Thus it is possible for some one impression which may hardly exceed the limits of physiological excitation, but is aided by circumstances, suddenly to let loose the whole store of accumulated forces and to give rise to an outbreak of the most intense feelings and most powerful movements." The periodicity to which Rindfleisch refers in the above passage is one of the most marked features of neuralgia. Neuralgic pain of all kinds is apt to come on regularly at stated intervals. Night after night it may prostrate its victim, leaving him free from all suffering during the day. The regular intermittency of neuralgia of the supra-orbital branch of the fifth nerve has gained for it in malarial districts the name of "brow-ague." Dr. Creighton believes that neuralgic pain may be compared to the remembrance of previous stimuli, and he quotes the following interesting case as an instance of unconscious memory in disease. "The sufferer in this case," he says, "was a Cambridge mathematician of repute, who may be trusted to have rightly inferred the sequences of cause and effect. Having accidentally struck his forehead just over the eyebrow, against the edge of the mantelpiece, he felt the pain of the blow as usual at the time, and just as naturally soon forgot it. Several weeks afterwards he had an acute attack of neuralgia all over that side of the face; and from some indications of a subtle nature best known to himself, he was led to connect the neuralgia with the contusion of the eyebrow, which had evidently been severe enough to make some impression on his memory. He had never had neuralgia before, nor did any explanation of the paroxysmal attack seem so ready to hand as the antecedent supra-orbital injury. The supra-orbital twig of trigeminus had been touched by the blow; it had transmitted impressions to the centre which had not only been felt as painful at the time, but had been stored up in the chambers of unconscious memory. After an interval, but upon what provocation one knows not, the whole trigeminus of that side of the face becomes the seat of paroxysms of pain, shooting as if from the trunk of the nerve along the several branches, ophthalmic, infra-orbital, and inferior maxillary. It is difficult to regard that particular case of facial neuralgia otherwise than as one of memory. The memory, it is true, ranges more widely than the reality; also it is paroxysmal like the gusts of a storm.

It is as if the original pain had multiplied a thousandfold by brooding upon itself."

The hypothesis advanced in the last sentence of this quotation was thought by the author to throw some light on that hitherto inexplicable disease known as tetanus. In this condition a nerve injury, not always in itself very severe, produces terrible reflex convulsions, only terminating, as a rule, in death. He would explain the magnitude of the reflex muscular contractions by supposing that the memory of the original injury greatly increased in intensity each time it was unconsciously reproduced in recollection.

The three cases of my own that I have referred to above all support in some measure this theory. In each the pain, muscular spasm, or trophic disturbance was a reflex result, which appeared at first sight to have no original stimulus to start it going. On looking into the histories, however, there *was* plenty of stimulus in each case, as is shown by the long record of antecedent toothache; and although the patient may have fondly imagined that such pain was a thing of the past, it is pretty clear that the repeated worrying of the nerve terminals was silently accumulating to explode in full force when some extraneous cause should set fire to the fuse. It is fortunate that this power of hoarding up stimuli seems to be confined to a few special nerves of the body; were it otherwise one could scarcely contemplate the future, say, of an enthusiastic football player, without mingled feelings of sorrow and apprehension.

Neuralgia of the Fifth Nerve.—Of all the nerves of the body the trifacial is the one most frequently the seat of pure neuralgia. It is not difficult to understand why this is so, when we bear in mind the constant irritation to which the terminal branches in the teeth are subjected during so many years of our short lives; and when we also remember the numerous connections between this nerve and the other nerves of the head. Without entering into the minute anatomy of the fifth nerve—a digression for which I have not time in this paper—let me point out one or two important facts with regard to its origin and distribution. The fifth nerve may be compared with one of the spinal nerves, inasmuch as it has a motor root which supplies muscles, and a sensory root provided with a ganglion near its commencement. In descrip-

tions of the fifth nerve sent in for examinations I have known the motor portion omitted altogether. Examiners do not approve of this omission, although it seems to have common sense to support it, since in reality the trifacial consists of two separate nerves. The way in which the cranial nerves are numbered at the present time is certainly rather puzzling, and might, I think, be arranged on a more satisfactory plan. The motor root of the fifth nerve seems originally to be connected at its deep source more with the fourth nerve than with the fifth; so that if the spinal accessory, which appears to be the corresponding motor portion of the vagus, enjoys a separate title, there is no good reason why the motor fibres of the fifth should go borrowing. These motor fibres, as you will remember, pass with the lower branch only of the nerve and supply the muscles which move the lower jaw. It is therefore easy to understand why trismus or spasmodic closure of the jaws occurs from irritation of the fifth, as in the case I have related above. By means of the lenticular ganglion the third nerve, *i.e.*, the motor nerve of the eye, is intimately connected with the ophthalmic branch of the fifth; and this explains why disordered movements of the eyeball may occur from the irritation of bad teeth. The facial nerve which supplies the muscles of the face proper is also intimately connected with the fifth in several ways. Thus the sphenopalatine, or, as it is sometimes called, Meckel's ganglion, communicates with the geniculate ganglion of the facial by means of the Vidian nerve; and the otic ganglion of the inferior maxillary trunk serves as a second link between the two nerves. Again the facial, although it is usually considered a purely motor nerve, supplies a sensory branch to the front and back of the concha of the ear, which become anæsthetic when the facial is paralysed. This sensory branch evidently arises originally from the fifth and blends with the facial. Communications also exist with the glosso-pharyngeal through the otic ganglion. The sympathetic system is brought directly into touch with the fifth nerve not only through the large Gasserian ganglion but also through each of the four ganglia to which I have referred in the last paragraph. When we consider all these connections it is easily understood that irritation of almost any nerve of the head and neck may cause neuralgia of the trigeminus.

In accordance with the behaviour of nerve pain elsewhere, when true neuralgia of the fifth occurs, the pain is sometimes localised in particular areas of tenderness and pain. If the *first* or ophthalmic branch be affected there may be a tender spot (*a*) just at the point where the supra-orbital emerges from its foramen on the ridge of the brow; (*b*) a second where the nasal branch becomes superficial just above the ala of the nose; and (*c*) a third spot may be present in the eyeball itself. All these tender localities were extremely well marked in the old man from Walsall, whose case I read out to you a few moments back. A fourth point (*d*) over the outer part of the upper eyelid is described, but has not been so frequently met with in my experience. When the *second* or superior maxillary branch is affected, the painful and tender spots are at (*a*) the infra-orbital foramen, and (*b*) along the gums of the upper jaw, both very well shown in the third case. More rarely there is a tender place (*c*) over the eminence of the malar bone. Neuralgia of the *third* or inferior maxillary branch may cause great tenderness on pressure at (*a*) the mental foramen, or at (*b*) the temporal region just in front of the ear. A case lately under my care had intense pain on each side just above the zygoma, and nowhere else over any branch of the third nerve. It may also be felt over (*c*) the parietal eminence, a region common to this and occipital neuralgias. It will be noted that these tender areas correspond for the most part to positions where the nerve becomes superficial, or passes through an aperture in bone or fascia. These positions are marked on the skull before you by stars of coloured paper. As being beyond its scope I leave out of this paper altogether the question of treatment.

Extracts from Essays on Chinese Dentistry.

WRITTEN BY YOUNG CHINESE STUDENTS WHO ARE LEARNING
ENGLISH AT THE ANGLO-CHINESE COLLEGE, FOOCOW, CHINA.

By A. M. H. (communicated through C. ROBBINS, L.D.S.Eng.)

IN China dentistry is not widely practised, as the dentists not only are unable to supply the lost teeth but also they are not able to arrest the decay of the teeth, therefore I have only concentrated two themes in my mind upon which I will write, viz., the extraction of the teeth and the pretence of

catching the tooth worms. Once upon a time on my way to school, while passing the Ming bridge I chanced to see a personage submitting to an operation of a native dentist, as he had undergone pain in one of his molars for some time. My attention being attracted I took my stand by them to watch narrowly what was going on. The dentist dipped some soft pink substance on his instrument, which was somewhat like a knitting pin, but instead of having pointed ends, had blunted ones, and he applied it to the base of his patient's diseased molar. During the meanwhile he put an end to his talk by saying "Ha! beware! keep your tongue still lest it will touch the medicine and be injured." In another moment he extracted the diseased molar by means of his forceps, with perfect ease. His patient then gargled his mouth with water in order to prevent the gushing of the blood and the operation was completed. After all was over I took my departure and resumed my journey to school with great satisfaction. On inquiry I found out that the drug, which the dentist employed is generally and properly known by the name "Lu sauk dang" [arsenic], "the drug of severing bones." Some is white. According to my opinion the difference of its colours is due to the variety of the colouring matter stirred and mixed in the mixture.

The prescription of the medicine necessary in making it and the method of mixing it are hidden in the pith of the minds of the selfish dentists each of whom has the lot, marked out by his birth, of being secretly communicated by their forefathers with them.

On this account every one of the personages of whom I have diligently enquired as to how it is composed, and how it is made, allege that he has not the least idea. Now I want to state another case; I recollect when I was stripling being a spectator of a ridiculous dental operation performed by a menial surgeon. His life was that of an itinerant. Generally he made his choice of the open space in front of some club elaborately sculptured, or in the vicinity of some highway, to set out varieties of drugs and ointments, highly burnished knives and crockery, such as cannisters, mugs, &c., together with lamps all mingled higgledy piggledy, pretty much as I have enumerated them. No sooner he struck his gong to attract a crowd than people came flocking to him, and

children, as a matter of course, would elbow their way through the throng towards him. After all he offered to extract a tooth free of charge for any one who would submit to his first operation. A boy, of a dozen years old, who was neither well bred nor well-to-do, took advantage of his offer and stepped forward to have his shaken tooth extracted. Then the surgeon dipped a piece of paper in a mug of Lu-sauk-dang [arsenic] and brought it in contact with the tooth. At the same time he enjoined upon him to close his mouth as tightly as possible and pasted half a dozen strips of paper, at one end, on his face, leaving the other ends downward. The boy thus adorned was such an apparition as is seldom to be met with in broad daylight. After everything was ready the surgeon befooled the boy saying, "You should jump as often as I beat my gong so that your tooth will be fully influenced to cause to drop down by the drug without slight pain." We undoubtedly know that a boy of a dozen years is generally an odd mixture of ignorance to credulity. On account of this he readily followed his advice and jumped as speedily as he beat his gong. The wide throng of spectators of course burst into a laugh and meanwhile the tooth fell off.

Now let me advert to the pretence of arresting the tooth worms. One of my relatives was once attacked by a serious cold and after the cold was broken up by restoring activity to his skin he had a neuralgia having its origin in one of his molars, which gave him such an intense suffering that he could neither eat nor repose, but moaned with a voice so audible and so plaintive that it sent a thrill to the heart of every one in the house. At first he endeavoured to alleviate his pain by holding the solution of wonghu in his mouth, but without avail. On the second day his suffering increased to a remarkable degree, indeed it is impossible even at this distant period to reflect without horror on the miseries of his toothache state. Then a surgeon stepped in and declared that as the molar was affected by the cold which attacked before it was not tractive and that if extracted there would be no end to the bleeding so that he went his way.

Finally he submitted to an operation of a woman dentist whose agency was to arrest tooth worms. Her general operation is as follows:—A chopstick and a silver pin are the only instruments she requires in her normal act. She is willing

to exhibit them to any one who conceives an inclination of discerning her trickery. She brings the chopstick in contact with the diseased tooth and cautiously pokes it through with the pin in search of the odious worms, after a while scrapes out a lump of yellow minute worms on the chopstick and immerses it in a cup of water. Each lump consists of from ten to fifteen worms, and sometimes two or three hundred worms are scraped in an immense number of lumps, *if the patient makes an exact bargain at first that the fee should be defrayed according to number of worms scraped.* She declares that each lump of worms abide in the same domicile located in the diseased tooth.

The general fee is four hundred cash (about 1s. 2d.), and only the poor may take advantage of being in penury to pay two hundred cash. With reference to my relative, the treatment relieved pain for a couple of days. After the elapse of that time he was in an intolerable agony again. No relief could be secured save by a fresh resort to that lady's booth and another submission to her operation. His toothache was treated in this way time and again, but was not eradicated. Ultimately the neuralgia of the tissues of his diseased molar was broken by following the medical advice of one of his acquaintances, that diets which were cold in nature were the best remedies of the disease of the kind.

Why is it her treatment can relieve the tooth ache for sometimes, or even eradicate entirely? It is because, I suppose, that the pricks of the pin have the effect of bringing the poisonous blood out of the diseased tooth.

Another Paper.

. . . Very many are cured by these medicines, but 40 or 50 per cent. are only cured in one or two years. There are two remedies required, one of holding the medicine in the mouth, and the other washing. The medicine which the dentists give the patients to hold in the mouth is this. They use pepper gingers juice, or the roots of keung [a tree whose flowers blossom and decay in a day] and decoct one of them into a decoction. They are of ferocious property so that I do not know whether it can heal the sickness or not, but I know that when this medicine is held in the mouth, only a very

little while, the mouth will swell up, and moreover patients feel more uneasy. The remedy of washing is the most wonderful of all. How do they wash the patients? They go to the hills to gather the buds of the mulberry plants, and put them in a mortar and pound them very fine, then they strain them through a cloth in order to take away the dregs. Now they put the juice in a basin and then begin to wash the patient's eyes with a piece of silk batting. When the juice is filtered they then change for the pure juice again, in the basin, to wash the patient's eyes, and do this twenty or more times. When I saw this I asked, "What do you do that for?" They answered that the germs of the teeth were drawn up to the eyes by the medicine and washed off. Accordingly I made an examination of the juice. Oh! I was that there were germs moving in the juice which were large as hairs and of a very white colour. They washed till I could find no germs in it, then stopped. Then the toothache was caused by the germs. Accordingly if the germs were washed off there should not be any more toothache. Why are the patients only cured in one or two years? Because no doubt the germs which they produced are not true germs, I think, but only to cheat for money.

[After mentioning other treatment (and that of using arsenic—Lu-sauk-tang) he says:] The receipt of Lu-sauk-tang is as follows:—Burn the bones of the dog or man into ashes, and then mix them with some other stingy medicines and pound them very fine like powder. I am very sorry to say I cannot remember this receipt all right, for I cannot find my receipt.

Another.

"Teeth are the most important objects in human life."
"If any animal has no teeth it will be very difficult to make him a living." "Teeth are very necessary to digestion, and are very important in another way; they aid to give a fine complexion to the personal appearance of any one."

VASELINE is suggested by Galalowski for use with immersion lens instead of oil. The refractive index of vaseline is 1.40.

LEGAL INTELLIGENCE.

Action for the Recovery of Fees.

PENFOLD *v.* FOISTER.

At the Bloomsbury County Court on Dec. 13, 1894, before Judge Bacon, Q.C., the case of Penfold *v.* Foister was heard. It was an action in which the plaintiff, Mr. T. Penfold, a dentist, of 30, York Street, Portman Square, sued the defendant, Miss Foister, an independent lady, of 21, Duke street, Portland Place, to recover the sum of £24 3s., value of a set of false teeth.

Mr. McIntyre was counsel for the plaintiff; and Mr. Greenfield for the defendant.

The plaintiff's case was that the defendant consulted him about her teeth, with the result that he advised her to have a set made. The lady had a false top set, but only six teeth on the lower jaw. There were many attendances, and while at Hastings Miss Foister wrote expressing her satisfaction at the teeth, and stating that she could eat with comfort. In the meanwhile, according to the custom of the profession, plaintiff, who had retained her old top set of teeth, smashed them up and allowed her £1 for the old gold plate. The lady then wrote back demanding the return of the old plate, for which she had paid £12 12s. She also alleged that the teeth did not fit, that she could not eat, and returned the bottom set. Plaintiff was willing at any time to make good any defects, but owing to the defendant's insulting letter he declined to do any more until she had tendered him an apology.

In cross-examination plaintiff said that the teeth might not have fitted at a certain time owing to the change of the mouth. His charge was one guinea a tooth, and he was of the opinion that the most difficult part of the operation was preparing the patient's mouth. He remembered Miss Foister saying that when she ate anything the teeth jumped out.

And did you not remark to her that you were so very sorry that you could not offer her anything to eat?—No, I do not remember.

You kept the lady's top plate and broke it up without her consent?—Yes, I kept it because I did not want her to wear it until she was used to mine.

You wrote her the following letter demanding an apology, and—

HIS HONOUR: You need not read that, because, to my mind, there is nothing so foolish as writing letters when there is an exhibition of temper on both sides.

MR. GREENFIELD: What would be the cost of the material used in the set of teeth?

PLAINTIFF: I am not prepared to answer that; it is not right to the profession.

Would I be right in saying that the work and material would cost about 18s. ?—I cannot answer that.

Then you cannot deny it?—It is not material, it is skill. The set takes two or three days to make, and I frequently charge twenty guineas.

Then you leave a very good margin for profit.

His HONOUR : If a woman will go to a West End dentist where big prices are charged, she must pay for it. If she had gone to other dentists she might have got the set for 20s.

Mr. CAMPBELL, another dentist, said that in his opinion the material would cost £3 or £4, and the work would occupy a few days. It was not his custom to destroy any teeth plates left in his care by patients.

For the defence Miss Foister was called, and deposed that the teeth did not fit properly, she was unable to eat with them, and they hurt her very much. She had paid £8 into court for the upper set.

Mr. GEORGE, dentist, stated that he examined the teeth and found them to fit very badly.

Mr. GREENFIELD : What would you say the material and labour cost ?

WITNESS : About 18s.

His HONOUR : What would you make the teeth for ?

WITNESS : £5 5s.

If the work and materials cost only 18s. ?—Yes.

His HONOUR : Then you would have a fair profit.

In the end his Honour gave judgment for the plaintiff, allowing the defendant £1 for the plate retained. He, however, disallowed costs.—*Daily Telegraph*.

WEBB v. WILLIAMS.

ON Dec. 28, in the Chancery Division before Mr. Justice Stirling, in the action of Webb v. Williams, Mr. Micklem, on behalf of the plaintiff, moved for a writ of attachment against the defendant, C. Walter Williams, for breach of an order made by his Lordship restraining him from practising as a dental surgeon at Bournemouth, or within a radius of ten miles. The defendant had been in the service of Mr. Webb, dentist, with whom he had entered into an agreement that for five years he would not set up in business as a dentist, but he had broken this agreement. An application was accordingly made to the Court on November 19, for an interim injunction, restraining the defendant from continuing to practise as a dentist at Bournemouth, which injunction was served on him on November 27, and which, it was alleged, he disregarded. The defendant now appeared in person,

and promising to obey the order, and to pay the costs of the present application, his lordship made no order on the motion.—*Bournemouth Guardian*.

Are Dentists Legally Qualified to Administer Anæsthetics?

THIS question has recently been raised, and it is not surprising that there should be some uncertainty as to the answer, inasmuch as there is no direct authority upon the subject. The Dentists Act, 1878, says nothing about it. Section 55 of the Medical Act, 1858, contains a saving clause negating any interference with the "lawful occupation" of dentists. But neither of these Acts deals with the question of actual practice by unqualified persons—except to bar their right to recover fees—but merely with the unlawful assumption of titles. Was, then, the administration of anæsthetics part of the lawful occupation of dentists? The only statute which appears to touch the point is the Apothecaries Act, 1815, section 20 of which imposed a penalty on persons "acting or practising" as apothecaries without being registered as such under that Act. There have been certain decisions under this section which have some bearing on this case. The administration of anæsthetics, being for the purpose of rendering the patient insensible to the pain of a surgical operation, is, it is assumed, a medical function analogous to the administration of drugs for alleviating pain generally. The latter has been held to be a work requiring a medical qualification; and, accordingly, by virtue of section 20 of the Apothecaries Act, a person who is a surgeon only is not entitled to perform such a function, except in the case of a surgical case (*The Apothecaries' Company v. Lotinga*, 2 Moo. & R. 495, and see *Leman v. Fletcher*, 42 Law J. Rep. Q. B. 214; L. R. 8 Q. B. 319). Now a dentist may or may not possess a general surgical qualification as well. If he is merely an unexamined "registered" dentist, owing his title solely to the fact of having been in practice when the Dentists Act was passed, it is submitted that he is clearly not entitled in any case to administer these drugs. But if he is a qualified surgeon he has, upon the authority of the above-mentioned cases, the right to do so. If he possess only a diploma in dental surgery, the point is doubtful, though, on principle, it is difficult to see why he should not have this right. In view of the general importance of this question, it is very desirable that the legal qualification necessary for administering anæsthetics should be clearly defined in a manner consistent with the interests of the profession and the public safety.—*Law Journal*.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

AN ordinary meeting of this Society was held on Monday, January 14. Owing, however, to the late date of the meeting, the report is held over to the February issue.

Opening of the New Dental Hospital and School, Edinburgh.

THE opening of the new and central premises of the Edinburgh Dental Hospital and School, Chambers Street, took place on Thursday afternoon, December 13, in the presence of a large number of the friends of the institution. The Dean of the School (Mr. Bowman Macleod) presided and was supported by Lord Provost Macdonald, Sir Charles Pearson, Q.C., M.P., the Revs. Dr. Macgregor (St. Cuthbert's), and Dr. Blair (St. John's), Baches, Kinloch, Anderson, Sloane and Pollard; Councillors Mitchell Thomson, C. S. Brunn, James Robertson and Lang Todd; Professor Sir Douglas McLagan, Dr. J. Smith, LL.D., Dr. Peddie, Dr. Peel Ritchie, Dr. Stevenson Macadam, Dr. Ivison Macadam, Emeritus Professor Struthers, Mr. Macgregor, Mr. D. Lowe (Heriot's Hospital), &c.

The Rev. Dr. Macgregor opened the proceedings with prayer, after which Mr. G. M. Stuart, W.S., the hon. sec., intimated letters of apology from the Marquis and Marchioness of Tweeddale, Lord Low, Lord Rutherford Clark, and others.

Mr. BOWMAN MACLEOD (Dean of the Dental School) said: My Lord Provost, ladies and gentlemen,—In making a few introductory remarks on behalf of the directors, I am fortunate in not requiring to make any prefatory apology for requesting the good office of your lordship, and the presence and assistance of so many distinguished citizens at the formal opening of these new comfortable and commodious premises. I think we are justified in the course we have taken, seeing that the object and aim of our existence as a benevolent institution is the relief of suffering. That your lordship has more than a magisterial interest in us we are all aware; you have for years taken a personal and very active interest in our work, and have on many occasions given the hospital the benefit of your business acumen and advice, and we deem ourselves fortunate indeed in having the Right Hon. Lord Provost M'Donald, one of our own directors, to come and declare this building open for the dental relief of the necessitous poor. During the eleven months ending November 31, we have treated upwards of 12,000 cases, 4,500 of these, or more than one third, being teeth which, by appropriate treatment, have been restored

to a sound condition, and rendered capable of properly preparing the food for that unconscious digestion and assimilation so necessary to perfect health. To overtake this great and good work we have the unpaid services of eighteen dental surgeons (three dentists attending on each day of the week), and four medical gentlemen as anæsthetists, who are assisted in their work by forty-five students. This brief statement will, I trust, give the public some notion of the vastness of our labours, and will induce them to subscribe largely and heartily, and enable us to wipe out the debt of £4,000 with which we are at present burdened.

The LORD PROVOST said : This institution, as some of them knew, had a small beginning. In the early days of the institution those connected with it thought they were doing a great work when the number of people attended to was 250. Last year the large figure of 11,621 was reached. In the early days the free-will offering of patients was only £6. Last year they amounted to £60. That went to show that the people who were attended to at the hospital were of that class who could not have gone to a dentist to pay fees. It was not only doing a great work in that way ; but the hospital and school was also furnishing a thorough training to young men who were going into the dental profession, and to surgeons who desired to take the dental diploma. The Lord Provost reminded the company what the Corporation had done out of their grants in aid of the Dental School, and in concluding, made a strong appeal to the public to come forward and help the directors to wipe off the debt of £4,000 which still remained on the new buildings. He had much pleasure in declaring the New Dental Hospital and School buildings open, and he had no doubt great good would result to the city from them.

Mr. HEPBURN proposed a vote of thanks to Mr. Bowman McLeod and the directors, and Dr. SMITH proposed a similar compliment to the Lord Provost for presiding.

The company then inspected the buildings, and tea and coffee were served in one of the rooms.

Birmingham Dental Hospital.

THE annual meeting of governors and subscribers of the above institution was held on December 13, the MAYOR (Alderman T. S. Fallows), in the chair.

The committee's report stated that during the year £108 10s. had been received in subscriptions, £50 had been received from the Hospital Saturday collection, and the income from rent, charity boxes, registration fees, &c., raised the total receipts to £647 1s. 4d. Against this amount were payments amounting altogether to £696 os. 4d., but £106 10s. 2d. of this was balance due at the end of the previous year.

The report of the Surgical Committee set forth that the number of operations under ether had decreased during the year by 501, whilst those under nitrous oxide had slightly increased. The fillings in gold had increased 20 per cent., and all the operations for the preservation of teeth had increased largely. In moving the adoption of the report as a whole, the Chairman said that although the charity was a small one it was performing a great amount of good work. The financial position was not so bad as it appeared to be at first sight, because, although there was a balance to the bad, it was not half so large as at the end of 1893. If they had only received a donation or legacy of £50, as they did in 1893, they would have been in a much better position than formerly. Whilst the subscription list of most charities was decreasing, it was satisfactory to note that that of the Dental Hospital was increasing. The increase was small, the total amount of the subscriptions being £108 10s., as against £104 6s. last year, but still it was gratifying to find that financially the charity was improving.

Mr. WILLIAM THOMAS seconded, and the report was adopted.

At the conclusion of the business thanks were—on the proposition of Dr. Haynes, seconded by Dr. J. H. Blakeney, and supported by Lieutenant-General Phelps—voted to the Mayor for presiding. His Worship briefly replied.

NEW INVENTIONS, &c.

The New Columbia Dental Chair.

THIS chair received the first award at the Chicago Exhibition. The special features claimed for it are: the absence of legs, there being nothing in the way of the operator's feet, or of the placing of an engine, &c., in the desired position. The chair can be raised or lowered noiselessly, and embraces a range of eighteen inches without cutting the floor, and is worked on a strictly hydraulic principle. The chair can be thrown back till the head position is a few inches lower than the body—a very desirable position for fainting, &c. The chair revolves directly under the seat, thus avoiding the carrying of unnecessary weight, and is controlled by an instantaneous-locking lever. The back frame is pivoted to the chair body; the upholstered portion is hinged at its upper edge by a vertical sliding frame, the

lower end being adjusted by means of various movements of the back. This and the seat may be lengthened or shortened for the smallest child or largest adult.

A special feature is the detachable arms, as they are constructed to allow of being reversed by turning the convexed part of one to the patient, and so allow the operator to stand much closer; while by reversing both in a similar manner, the breadth of the chair is considerably narrowed—a great



advantage to those cases where the patient has a tendency to shift his or her position. The head rest is raised, lowered, adjusted and controlled with one lever; it has the longest range, and appears to be more quickly adjusted than any other in present use; it is open, and so allows the head to be held firmly without practically disarranging the hair. As far as can be gained from a rapid survey, the chair seems in every respect admirable, and is well worthy of notice by any intending to purchase a new chair.

The agents in this country are Messrs. G. W. Rutterford and Son.

A Regulating Chloroform Inhaler.

IN the January number of last year a short notice on a chloroform inhaler, introduced to the profession by Messrs. Krohne and Seseman, was given. These gentlemen have now forwarded to us an improved form of this inhaler, with which they maintain that chloroform may be given more safely. As will be seen from the figure, the inhaler, which goes by the name of "Handy Inhaler," can be used with



one hand. Each full compression of the rubber ball evaporates at a temperature of 62° Fah. one minim of chloroform, producing 1.15 cubic inches of chloroform vapour, but in warm hands a higher percentage is given off at first. The inventors recommend that the administration should be commenced in every case with chloroform very much diluted with the lightest pressure of the ball. There should then be a gradual and systematic increase to the largest percentage of vapour which the patient is able to inhale comfortably with normal and unimpeded respiration until the required degree of anæsthesia is produced. During the first minute, on an average, there should be 18 to 20 $\frac{1}{8}$ compressions of the ball, during the second minute the same number of $\frac{1}{4}$ compressions, the third minute $\frac{1}{2}$, and during the fourth $\frac{3}{4}$, the chloroform vapour being always projected in the air way as

inspiration commences. By giving the chloroform in this systematic way Messrs. Krohne and Seseman maintain that anæsthesia can be produced without danger; nevertheless we do not agree with the statement they make, that it is to be recommended to the dental profession, and in noticing this inhaler, although it may prove useful and an advance on others for use in ordinary surgical work, we doubt its ability to completely abolish all the many dangers attendant upon the administration of chloroform.

A New Form of Toothbrush.

THIS folding toothbrush has recently been invented by Mr. H. A. Wankly. The brush is refitted to a metal case into which it can be doubled when not in use. The handle being



an open metal case is perhaps not quite so pleasing in use as the solid ivory stem, but the brush should, nevertheless, we think, prove useful to travellers on account of its compactness.

STEEL TEMPERING.—The Beck medium for steel tempering consists, according to the *Ohio Dental Journal*, of colophony, 50 parts; turpentine, 40 parts; linseed oil, 10 parts; and the following mixture of powdered salts: ammonium chloride, 65 parts; potassium sulphate, 6.6 parts; potassium nitrate, 13 parts; sodium nitrate, 4 parts; assafœtida, 11 parts. The oils and gum should be melted together and the saline mixture added little by little, whipping it well in. The mixture must be stirred until cold so as to insure the even distribution of the saline powder.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Nasmyth's Membrane.*

By F. T. PAUL, F.R.C.S.

NASMYTH'S membrane is a delicate horny pellicle which can be removed from the surface of the enamel of young teeth by the action of acids. The principal characters of this structure are:—(1) That it is exceedingly thin. (2) That it presents a reticulated pattern under the microscope, with or without the help of nitrate of silver. (3) That it is of a horny nature, as is shown by its indestructibility by both acids and alkalies, and by its giving off when burnt the same smell as burnt feathers.

The chief views as to the nature of this structure as set forth in Tomes's "Dental Anatomy" are familiar to you all. They are shortly:

- (1) That it is an exceedingly thin layer of cementum (Tomes).
- (2) That it is a final product of the enamel cells (Kölliker).
- (3) That it is derived from the external enamel epithelium (Waldeyer).

The cementum theory so ably advocated by Tomes has always seemed to me to require further confirmation; I therefore set myself to work at Nasmyth's membrane, and the following are the results obtained.

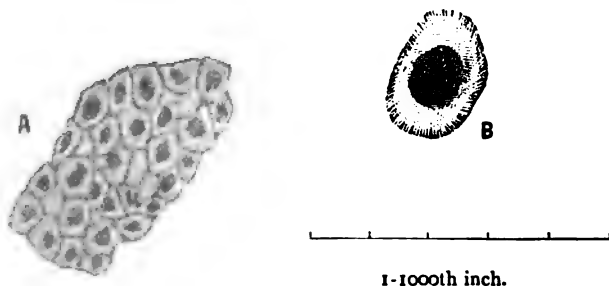
Method employed.—Young, unworn teeth, human, monkey, and sheep, were placed in 2 per cent. solution of bichromate of ammonia for one month, then after washing transferred to two or three changes of spirit, and finally placed for decalcification in a 5 per cent. mixture of nitric acid and weak spirit. As soon as the enamel was softened, the tooth was placed in a watchglass full of water, and the membrane torn from its surface with needles. It was then stained in eosin, and mounted in Farrant's medium.

Specimens obtained in this way showed the reticulated pattern at once and without any treatment with nitrate of silver. Now it has been assumed that this appearance might be due to the impress of the terminal ends of the enamel fibres; but against such a suggestion is the fact that the pattern is at least ten times too large for the enamel prisms. Measurements, however, are unnecessary to prove that the pattern is produced by the outline of epithelial cells, since in many of them the nuclei are quite as visible as the margins. I think it is only necessary to look at a specimen obtained from the canine of a young adult to accept the fact that a layer of epithelial cells enters into the composition of Nasmyth's membrane, whatever difficulties there may be in accepting this view. (See fig.)

Epithelial cells, however, do not apparently account for the whole structure, for the shreds of membrane removed curl up like the fenestrated membrane of Henle, when torn from the inner coat of an artery, and the curling is seen in some specimens to be due to the presence of a thin structureless membrane on which the epithelial cells are placed. So thin and so clear is it that I only ascertained with great care that it was placed between the cell layer and the

* Read before the Liverpool Dental Students' Society.

enamel. At first it seemed probable that this transparent membrane was of mesoblastic origin, and corresponded to an original basement membrane placed between the enamel organ and the tissues of the gum. If so, of course I should have met with it external to the epithelial layer, whereas it was between the epithelium and the enamel prisms, and must therefore be a product of the enamel organ itself, perhaps Kölliker's final product of the enamel cells.



A. Portion of Nasmyth's membrane for adult human canine stained with eosin; drawn to scale with Abbe's camera lucida.

B. A cell more highly magnified, showing coggled margin.

I make out then that the structure of Nasmyth's membrane consists in a layer of polygonal, flattened epithelium, measuring about 1-2000th inch broad, and up to 1-1000th inch long, placed upon a thin, structureless, elastic membrane. When a tooth has been decalcified in a strong acid aqueous solution, like Hopewell Smith's, I have easily been able to obtain the structureless lamina, but not the epithelial layer, and it appears probable that different methods of preparation are chiefly concerned in the diversity of views expressed as to its structure.

The next point to determine was the origin of the membrane. As is well known, an immature tooth whilst still beneath the gum is contained within a tough fibrous sac—the dental sac or follicle. I hardened some teeth from the sheep and the monkey in this condition. On dissecting them it appeared that at a certain stage the crown of the tooth was quite free inside the sac, but that at a slightly later stage the sac adhered to the tooth although it could be quite easily stripped from it. At the neck of the tooth the sac was continuous with the fibrous membrane from which the cementum and alveolo-dental membrane are developed.

On cutting sections of the dental sac in its free condition I found that it was composed of a thick, vascular, fibrous coat, lined internally with a thin layer of epithelial cells arranged after the manner of the external enamel epithelium, which it undoubtedly was. On subsequently examining the adherent sacs I found that the epithelial lining was wanting, and that the fibrous layer only was present. Under these circumstances it was fair to assume that the external enamel epithelium had come in contact with, and adherent to the surface of

the enamel, an assumption which was proved to be correct, since by firm scraping of the surface of this enamel under water I was able, without the help of acids, to remove shreds of membrane coated with a layer of epithelial cells, the nuclei of which were distinctly visible.

Now if these observations are correct—and of course they need corroboration—I shall endeavour to corroborate them myself, and I shall be much pleased if some of you will do the same—if, I say, they prove to be correct, it may be considered an established fact that Nasmyth's membrane is an epithelial structure and is derived from the external enamel epithelium. But how about the observations of others? Theories may of course be wrong; but careful observations by good men it is best to assume are correct, and when Tomes says that he finds encapsuled bone lacunæ in connection with Nasmyth's membrane in pits in the enamel, I accept his observation as a fact, though I dispute the theory he builds upon it. Tomes bases his view that Nasmyth's membrane is a thin layer of cementum chiefly upon the following observations:—(1) In several mammalians it is normal for the enamel of the crown to be covered with a layer of cementum. (2) It is not uncommon to find in human teeth that the cementum overlaps the enamel at the neck. (3) Nasmyth's membrane, when loosened by acids, comes away attached to the thin layer of cementum at the neck. (4) Thin layers of cementum present a structureless appearance under the microscope. (5) When Nasmyth's membrane appears to fill up a pit in the enamel bone lacunæ may be met with in it. This sounds like a strong case for the cementum theory. Still another interpretation is quite possible, and indeed equally reasonable. The only observations of Tomes relating to the membrane itself are the occasional presence of lacunæ in it, and its connection with the cementum at the neck of the tooth. I admit the correctness of these observations, though I have not been so fortunate as to find the lacunæ myself. At the same time I assert that the definite presence of an epithelial layer is indisputable, and if Tomes's observations are correct they must be accounted for consistently with this fact, which, as it seems to me, is not at all difficult. Every reason urged by Tomes in favour of the cementum theory is equally in favour of the possible occurrence of cementum outside a true Nasmyth's membrane. The cementum organ of the herbivora is the connective tissue wall of the dental follicle, whilst, as I have endeavoured to show, the epithelial lining of the follicle forms Nasmyth's membrane. Both layers are present in human as well as herbivorous teeth. Hence it seems quite reasonable to assume that, under the exceptional circumstances of a deep pit in the enamel, it should be filled, not by an overgrowth of this thin, horny pellicle, but by connective tissue derived from the outer wall of the follicle, which might then undergo in the human subject that change which is constant in many animals and in other parts of human teeth, namely, conversion into bone. Such a view would reconcile the apparent discrepancies between all observers. A fresh observation is, however, wanted to complete the case; it is the discovery of a horny or calcified, flattened epithelium, between the enamel and cementum in herbivorous teeth. Up to the present I have only had time to make one attempt to discover this. I split some properly prepared sheep's teeth and partly decalcified them; then deep down between the cusps I removed the cementum and scraped the surface of the enamel. Among the scrapings was one

piece of a distinctly epithelial nature. This would be the piece of evidence wanted if only one could be positive that no error could possibly have crept in ; but though I believe that I followed this particle from the inner enamel to the micro-slide, it is no doubt possible that it was liberated from some other part of the tooth. The observation therefore awaits corroboration. My belief is that in all compound teeth consisting of layers of dentine, enamel, and cementum, there constantly exists between the two latter a remnant of the external enamel epithelium in the form of Nasmyth's membrane, and I think it should be demonstrable, because, for instance, in the germs of sheep's teeth, the cells of the external enamel epithelium are large, numerous, and distinct, and by no means look as though they were functionless and likely to disappear, leaving no trace of their existence.

In regard to the other observation of Tomes referring to the connection of Nasmyth's membrane with the cementum at the neck of the tooth, it is easily explained in view of the origin of the former from the external enamel epithelium. In such case it, like the enamel, would be slightly overlapped by the cementum, and when the two are loosened by acids it is only natural that they should come away together.

Now, as regards Kölliker's view that this structure is a final product of the enamel cell. It seems to me that this view also is not at all inconsistent with my results. As I have pointed out, there is a clear, structureless lamina to which the epithelial cells adhere, and which is placed between them and the enamel. Is it not possible that when the external enamel epithelium becomes adherent to the enamel, the adhesion is effected through some final product from the enamel cells themselves. If so, Kölliker's observations are correct as far as they go, but are not complete.

I have now, gentlemen, urged all that I have to say in favour of the view that Nasmyth's membrane is chiefly an epithelial structure derived from the external enamel epithelium. I believe it is present in most if not all teeth, though it may often be very difficult, if not impossible, to demonstrate it. The points which I have raised are far from settled. Indeed, I am sure that much patient and skilful work will be needed before all doubts are solved, and the comparative histology of this subject has been satisfactorily worked out. It may seem to you a very small matter upon which to spend so much time and energy. But are you sure that it is a small matter? Is this structure to be regarded as functionless? It is chemically far more resistant than the hard enamel itself. May it not protect the enamel from those chemical changes constantly at work in the mouth? It is true that on exposed surfaces it readily wears away, but in pits and hollows and over the surfaces between the teeth it would not be subjected to this wear and tear, and in these, the most vulnerable points, it would remain, and may possibly constitute a valuable protecting agent. To carry the suggestion still further. Is it not possible that some of the friable, perishable enamel so prone to early decay may be enamel devoid of Nasmyth's membrane? If derived, as I think, from the external enamel epithelium, that epithelium is directly continuous with the surface of the gums, and may be supposed to readily participate in any inflammatory changes affecting them. Or it may be damaged or destroyed by too early lancing of the gums, and so opening the dental follicle before it has become adherent to the surface of

the enamel. Under such conditions Nasmyth's membrane might be absent, and it seems reasonable to suppose that enamel devoid of its protection could hardly compete with that which is shielded by it. Such views are, I am aware, of a very speculative nature, but I suggest them to you because I wish to gain the interest of clinicians as well as biologists, and to encourage you all if I can to join with me in trying to work out as far as we are able the origin, structure, and functions of Nasmyth's membrane.

Notes on a Case of Accessory Thyroid Gland Projecting into the Mouth.

By C. H. MCILRAITH, M.A., M.B., C.M.Glasg.

A. S., a girl 17 years of age, was admitted to the Golden Square Throat Hospital, under the care of Dr. J. W. Bond—by whose kind permission I am allowed to publish these notes—on June 2, 1894. She complained of a lump at the back of the tongue. It was giving no trouble, and had only been discovered two months previously, when her singing master examined her throat and noticed the lump there. Her speech was somewhat thick. She was an undersized but well-nourished girl. Situated at the base of the tongue, close to the position of the foramen cæcum, was a tumour about the size of a small

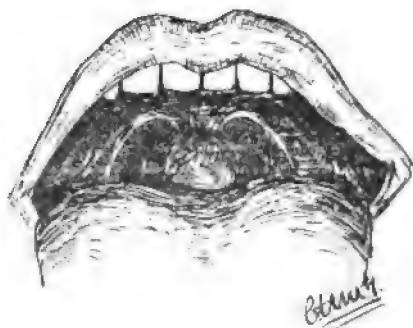


FIG. 1.

walnut. The larger half of it was to the right side. It felt semi-elastic, and was immovable on the deep tissues of the tongue. It pressed backwards on the epiglottis, and when the tongue was pulled out it almost touched the base of the uvula and the soft palate (as in fig. 1). The thyroid was normal. Under chloroform Dr. Bond cut the mucous membrane round about it with a pair of curved scissors. The tumour was fixed with a pair of tenaculum forceps and removed with the aid of a raspatory and a Mackenzie's polypus snare. Bleeding was profuse, but was controlled by pressure on the base with a finger round which a piece of lint steeped in turpentine was wrapped, whilst

the girl was turned almost on her face to allow blood to run out of the mouth. There was no recurrence of hæmorrhage, and the patient made an uninterrupted recovery, the wound being healed in ten days. Microscopical examination showed the tumour to present the ordinary appearances of thyroid gland structure.

Remarks.—Tumours which structurally resemble the thyroid gland are not infrequently met with in this region. They originate in connection with the lingual duct, a structure of embryonic significance. In the embryo a diverticulum takes place from the anterior wall of the pharynx, forming what is known as the thyreo-glossa duct, and about this the thyroid gland is developed. This duct opens

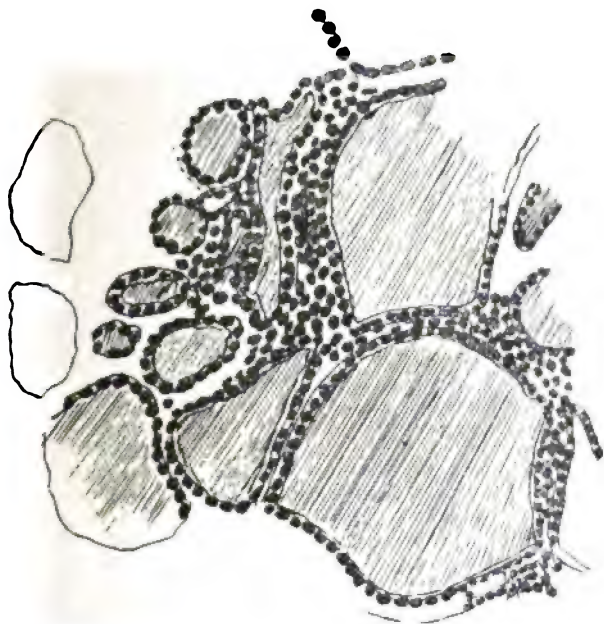


FIG. 2.—Microscopic appearance of a portion from the centre of the tumour.

at the base of the tongue at a spot represented in the adult by the foramen cæcum, and passing downwards, bifurcates to form the isthmus of the thyroid, the branches uniting with the embryonic gland structure to form the lateral lobes. As development goes on the hyoid bone is formed, and in its growth divides the duct into an upper (lingual) and a lower (thyroid) portion. Both of these are obliterated, as a rule, when development is complete; but sometimes, in the newly born child, a fine probe or bristle can be passed for a short distance along the lingual part from the foramen cæcum,

between the genio-hyo-glossi muscles to the body of the hyoid bone, where it is continuous with a fibrous cord passing in front of it over the thyro-hyoid membrane and down towards the thyroid isthmus. Occasionally either of the two portions persists—closed at both ends—and gives rise to a dermoid cyst. It is in connection with this lingual portion of the thyreo-glossal duct that a tumour such as above noted is developed. A full account of these is given in J. Bland Sutton's recent work on "Tumours." So large a tumour of the kind projecting into the mouth is almost unknown.

A Case of Follicular Odontome, or Dentigerous Cyst.

By JOHN W. PARE, M.D., C.M.Edin., L.D.S.Eng.

MARY J., aged 17, a weakly-looking girl, was advised by Mr. G. S. Bell, surgeon, of Leytonstone, to consult me about a swelling in the upper jaw causing some disfigurement, and also with reference to a carious tooth upon the same side which caused pain. The patient stated that the swelling was first noticed about twelve or fifteen months ago, and since then it had slowly grown to its present size, viz., that of a walnut, without giving rise to pain or much inconvenience.

On examination, there was found to be a very hard swelling filling the buccal sulcus, near the left canine eminence. The swelling was not the usual globular one, because a prominent sharp ridge was felt, running downwards and forwards across its centre towards the mesial line. The left upper canine was missing, and was said never to have been erupted; also there was sufficient space for it between the lateral incisor and the first bicuspid. The premolar being carious, loose and tender on percussion, with an injected red line round the gum margin, was extracted, but its socket did not communicate with the swelling; there was no crackling nor crepitus felt; the alveolar border and the teeth maintained their normal relative positions.

A diagnosis of dentigerous cyst being made, and the case being more suitable for hospital treatment, Mr. Maggs kindly consented to take the patient under his care at Guy's Hospital. On May 31, 1894, the patient being anæsthetised, Mr. Maggs opened the buccal wall of the swelling with bone gouges, and about a drachm of yellowish glairy fluid, showing masses of cholesterin, escaped. On probing the cavity the characteristic sound of enamel indicated the presence of a tooth, which latter was directed outwards, downwards and forwards, the crown pointing to the alveolar border. The tooth was firmly implanted, and on the forceps being applied some force was required to dislodge it; the walls were then squeezed together, and the cavity packed with carbolised lint. The patient attended the hospital weekly to have the cavity syringed with a solution of chloride of zinc and for observation, meanwhile syringing the cavity herself with the same lotion. The swelling, which was not in communication with the antrum, subsided slowly, and in October had disappeared.

The tooth was a well-formed left upper canine, with fully developed root. It had the appearance of being recently erupted, the enamel being chalky, not translucent. It was placed in a 30 per cent. solution of rectified spirit, to preserve it for examination. It was next

embedded in melted wax, in such a way that half the crown and root were exposed. The latter was then subjected to the action of a 10 per cent. solution of hydrochloric acid. After a short interval, bubbles were seen to arise, and the enamel to assume a more chalky and opaque appearance. On scratching it, a white powder was removed, leaving unaffected the enamel beneath, and this in turn was similarly acted upon by the acid. *No Nasmyth's membrane was seen.*

On examining microscopically the white powder, it was seen to consist of enamel prisms. On removing the tooth from the wax, it was found that the covered portion was unaffected by the acid. The object of placing it in the wax was that if Nasmyth's membrane were present, it could still be shown *in situ* attached to the tooth at the unaffected part.

It may be mentioned that there is often seen a little swelling, containing fluid, over the crowns of erupting teeth before the gum is cut. Sir John Tomes, in his "Dental Surgery," put forward the theory that if this fluid, which he supposes to be between the tooth and tooth-capsule, were enormously secreted, and the tooth never erupted, then a dentigerous or follicular cyst would result, and if so, no Nasmyth's membrane would be found over the crown.

The interest attached to this case is that no Nasmyth's membrane was found upon a careful and minute examination of the tooth, and the tooth itself, both as regards the crown and root, was normal in appearance and development. Mr. Bland Sutton says: "The cavity of the cyst usually contains viscid fluid and the crown or the root of an imperfectly developed tooth."

In conclusion, I desire to acknowledge the assistance I have received from my friend, Mr. Herbert Wallis, both as regards the notes of the case and the after examination of the specimen.—*Guy's Hospital Gazette.*

Note on the Probable Existence of Nitrous Oxide in the Air.

By J. ALFRED WANKLYN.

It is well known to those chemists whose work has led them to acquire a critical knowledge of gas analysis, that the percentage of oxygen in the air appears to be slightly higher when explosion with hydrogen is resorted to than when the method of analysis is a process of absorption. An example, which I quote from Bunsen's classical work on that subject, illustrates the kind of difference which is found between the percentage of oxygen as found by explosion and by absorption—Oxygen found by explosion, 20.96 per cent.; oxygen found by absorption with pyrogallate, 20.86 per cent. Possibly the difference may be only error of experiment, but I am inclined to think that it is something more substantial, and that it requires an explanation. If it is to be explained, chemists will at once see that the presence of 0.2 per cent. (by volume) of nitrous oxide would account for it.

If the question be asked as to the source of nitrous oxide, the reply is, that traces of it are to be expected in most ordinary combustions in everyday life. In our laboratories it is a frequent product, and it is

often overlooked. In the common elementary analysis of organic substances containing nitrogen, whenever we resort to that beautiful process which we owe to Dumas, we obtain nitrogen gas generally contaminated more or less with oxides of nitrogen. Nearly forty years ago Frankland called attention to the production of considerable quantities of nitric oxide in the Dumas process, and he also showed how to rectify the analysis by first reading the total volume of gas and then removing the nitric oxide and making a second gas-reading after the absorption. Inasmuch as nitric oxide contains half its volume of combined nitrogen, the analyst would add half the volume of the nitric oxide to the ultimate volume of nitrogen, and in that manner arrive at the real quantity of nitrogen yielded by the substance under examination.

Now, at that period of time, I had the advantage of being Dr. Frankland's private assistant, and I recollect the circumstances well.

The question arose, What about the nitrous oxide which we expect will result? The reply was, it does not matter at all, because it occupies the same volume as the nitrogen which it contains. Though it is probably produced, even as nitric oxide is produced, it does not affect the accuracy of a Dumas nitrogen determination.

At the present moment the possibility of the production of nitrous oxide under unexpected conditions has assumed a special interest. In his presidential speech at the Royal Society, Lord Kelvin said that Lord Rayleigh's nitrogen obtained from atmospheric air was heavier than nitrogen got in other ways by about 0.4 per cent. I suggest that this increase in specific gravity is due to the presence of traces of nitrous oxide. Every chemist who has made an ordinary combustion of an organic substance must have been struck by the vivid incandescence of the reduced copper when the stream of oxygen is passed at the termination of the combustion. Copper evolves much heat by union with oxygen; when air is passed over red-hot copper there are residual phenomena beyond the main one, and the heat of the main action causes a little of the nitrogen of the air to become oxidised. Nothing is likelier than the formation of traces of nitrous oxide, and that, I expect, will be found at the bottom of the Rayleigh mystery.

The formation of a condensed nitrogen with three atoms in one molecule I reject altogether. Such a compound would necessarily be unsaturated, and therefore could not be endowed with stability and inactive at the same time.—*The Chemist and Druggist*.

THE ROYAL COLLEGE OF SURGEONS, ENGLAND.—The following regulation in connection with the examination for the Diploma of Licentiate in Dental Surgery of the Royal College of Surgeons (England) has been adopted by the Council:—"A candidate who is referred at the examination for the L.D.S. will be required to produce, before admission to re-examination, a certificate of three months' additional study at a general hospital and a special dental hospital, the precise attendances required at each hospital being left to the discretion of the respective hospital authorities."

REVIEWS AND NOTICES OF BOOKS.

THE ANATOMY AND PATHOLOGY OF THE TEETH.

By C. F. W. BÖDECKER, D.D.S., M.D.S. With three hundred and twenty-five illustrations. Philadelphia. The S. S. White Dental Manufacturing Company, 1894.

IN any scientific enquiry a careful scrutiny should be made of the evidence of the senses, for they are often imperfect and misleading, and many of the false conclusions of scientific observers have been due to laying too great stress upon the apparent, while they have failed to apprehend the real. For true progress, facts not theories are needed, and false random conclusions, based upon imperfect observations, only put back the dial of science.

Thoughts such as these cannot fail to strike any one in perusing the pages of this book. It is a work that may revolutionise the whole of dental pathology and microscopy; on the other hand it is equally, perhaps more, possible that the statements made will in the future be found to be incorrect, and so the progress of dental science considerably retarded. For the many new theories launched will either live or sink in the light of future research.

First and foremost underlying the whole subject-matter of the book, is the rejection of the well-known cell theory of inflammation, and the promulgation of the views of Carl Hertzmann and others, which are briefly these: "Inflammation is a disturbance of nutrition of a tissue causing a recurrence of the embryonal condition of the tissue involved. The embryonal condition is established by the breaking up of the tissue into those medullary or indifferent corpuscles which, at an early stage of normal development, have built up the tissue. The medullary corpuscles arise not alone from the protoplasmic bodies of the tissue, the so-called 'cells,' but the intercellular or basis substance is also productive of such corpuscles, as these have shared in the formation of basis substance in the process of normal development. The medullary or indifferent corpuscles will still represent a tissue so long as they remain inter-connected and continuous. By the reappearance of basis substance simply the most favourable termination is established, the so-called 'resolution.' If the inflammatory or medullary corpuscles have largely

augmented in numbers, thereby remaining in uninterrupted connection, the result will be productive of a newly-formed tissue of increased size, a so-called 'hyperplasia.' If the inflammatory corpuscles springing from previous 'cells,' basis substance, and blood-vessels break asunder and become isolated, they will be suspended in an albuminous liquid, and will henceforth represent pus-corpuscles. The emigration of colourless blood vessels may participate in the formation of pus."

Upon this theory of inflammation Dr. Bodecker endeavours to show that an inflammation of the dentine can take place—a condition to which the name of "eburnitis" is given. This theory is supported by certain appearances in the dentine, which are illustrated by figures of an extremely diagrammatic nature. The view that the dentine and enamel are everywhere penetrated by protoplasmic material is adhered to, and drawings of tissues stained with chloride of gold are given. These illustrations would seem to prove conclusively the view put forth, but one naturally asks—are they faithful representations of what is seen under such high powers of the microscope? Here again the illustrations are far *too diagrammatic*. When an endeavour is made to destroy old views and create new ones, the creator of such views should endeavour to give a representation of what is actually seen, and the views put forward by the author would have been worthy of more serious consideration if only photo-micrography had been used as the means of illustrating the different specimens supporting those theories, for so far photo-micrographs give the best idea of what is really seen through the microscope. One does not wish to deny that the dentine and enamel are penetrated by a system of protoplasm, indeed it seems quite possible; nor would one deny that eburnitis does not take place; but an independent corroboration of Dr. Bodecker's observations is required, and so far in this country microscopists have been unable to produce such specimens. Would it not be possible for the author of this book to send some of his specimens illustrating these debatable points to the Odontological Society, who no doubt would appoint a committee to report upon the subject?

The unequal manner in which different subjects are treated is noticeable throughout the work—some are exhaustive, others

meagre. Perhaps the two best sections are those dealing with the pathology of the pulp and periosteum. A chapter is devoted to hyperostosis of the teeth, the author remarking that hyperostosis of cementum of a diffused character is *in most instances a fetal malformation*—a statement insufficiently supported by facts, and one open to great objections. Some idea of the use of pathological terms may be gained from this chapter, the sub-division of circumscribed hyperostosis being—

- (a) Osteoma on the body of the root.
- (b) Osteoma on the apex of the root.

Tumours of the teeth receive a separate chapter, but here again the statements made are open to much adverse criticism. Mr. Bland Sutton's researches are entirely ignored, much to the detriment of the subject-matter. The tumours are grouped under five headings:—

- (1) Odontoma, tumour of dentine.
- (2) Ameloma, tumour of enamel.
- (3) Osteoma, bony tumour of the roots.
- (4) Gigantic growth or teratoma.
- (5) Myeloma of the pulp.

This classification requires a few words of explanation to the unenlightened reader. The author states that "up to Virchow's time every tumour of the teeth was dubbed odontoma. Virchow confined this term to tumours of the dentine only, and we ought to adhere to this nomenclature." On what ground, may reasonably be asked? The term dentoma would surely be more correct. The amelomata of the author are the excrescences known as enamel nodules, while the osteoma described is the well-known specimen of Salter, classified by modern writers as a radicular odontome. The myeloma is, according to the author, a form of malignant tumour corresponding to a "round-celled sarcoma." Most pathologists would classify this in the probably more correct way as a polypus of the pulp, a growth, inflammatory in origin.

There is much more in this work that is open to searching review, but already the notice has crept beyond the usual allotted space.

The book is nicely printed and contains over 50 pages of references. The illustrations are numerous, but, as stated, are far too diagrammatic; there are, of course, exceptions, the figures 253 to 261 being notable instances.

MISCELLANEA.

THE MECHANISM OF DEATH UNDER THE INFLUENCE OF COCAINE.—Dr. Maurel, of Toulouse, has recently been carrying out a series of experiments with reference to the toxic properties of cocaine. He finds that the leucocytes become rigid and spherical, increase in size, and lose their adhesion to the walls of the vessels. The capillary vessels contract, a circumstance which may give rise to thrombosis and embolism, especially to pulmonary emboli. These changes in the leucocytes take place also with small doses of cocaine when the latter is present in considerable proportions, 10 per cent., for instance, a fact which explains the serious ill-effects sometimes following the employment of a small dose of cocaine in concentrated solutions. Pulmonary embolism being the most serious ill-effect of cocaine intoxication, it seems plausible that intra-arterial injections in the direction of an unimportant viscus would be much less dangerous than intravenous injections. The author's experiments show that this theory is well founded, seeing that he was enabled to inject into the femoral artery of a rabbit 10 centigrammes of cocaine for each kilogramme of the animal's weight without killing it. The toxic action of cocaine is not restricted in its effect on the leucocytes, but exerts its influence also in other directions, the most notable of these effects being contraction of the smaller vessels.

CHINESE DENTISTRY.—On another page of this issue we publish some essays upon Chinese dentistry by native students studying at one of the Anglo-Chinese colleges in that country. A glance through the article cannot fail to prove interesting, and gives a very fair idea of the condition to which dental science has reached in that part of the Far East. The lady missionary who forwarded these extracts to one of our members exercises herself the dental art in the various villages she passes through, much to the benefit of the suffering natives. Her letters contain vivid accounts of the various operations, and some idea of the manner in which the practice is carried on will be gathered from the following:—"When my coolies stop for a rest, I jump out and call for patients, spreading my forceps out on the top of my chair, and the

people just stand round with their mouths open. It is too funny to see them. If I have time I get a chair or form, if not, I pull them out just as they are standing."

THE USE OF VINEGAR AS A MEANS OF TREATING VOMITING AFTER CHLOROFORM.—A very efficient method of combating the vomiting which so frequently occurs after the administration of chloroform is, according to Dr. Lewin in the *Medical Week*, to be found in the use of an inhalation of vinegar. The face of the patient should be covered with a compress steeped in ordinary vinegar in such a manner that the air breathed can only reach the lungs after having passed through the cloth and thus become impregnated with the vapour of vinegar. After an application of this compress the pulse and breathing gain strength, the patient's colour improves, and the eyes resume their normal brightness, the discomfort caused by the chloroform narcosis, according to the author, completely disappearing. As soon as the compress dries it should be again steeped in vinegar and kept over the face as long as possible. The explanation offered of the favourable effect of vinegar inhalation on persons subject to chloroform anæsthesia is the stimulating action of the acetic acid on the respiratory organs, and especially the fact that this acid combines with the chlorine produced by the decomposition of the chloroform which is exhaled by the patient, and which is supposed to cause vomiting by irritation of the larynx, trachea, and pharynx.

A RARE GROWTH OF THE PALATE.—At a recent meeting of the Pathological Society, Mr. Shattock exhibited a somewhat unusual form of tumour removed from the palate, which in structure resembled certain growths of the parotid and sub-maxillary glands. It consisted of cartilage and myxomatous tissue, in which branching columns and cells were present. Tumours similar to this have been met with in the lips, although their presence in the palate is extremely rare.

THE DISCOVERY OF ANÆSTHESIA.—The *British Medical Journal* for January 5 contains the following paragraph:—

"A tablet of bronze, to the memory of Dr. Horace Wells, of Hartford, Conn., was unveiled on December 11, 1894, in

commemoration of the fiftieth anniversary of the discovery of nitrous oxide as an anæsthetic. On December 11, 1844, Dr. John M. Riggs, at Wells's request, administered nitrous oxide to him and extracted a tooth under the influence of the gas without causing him any pain. The tablet bears a medallion portrait of Horace Wells, with the following inscription: 'To the memory of Horace Wells, the dentist, who upon this spot, December 11, 1844, submitted to a surgical operation, discovered, demonstrated, and proclaimed the blessings of anæsthesia.'"

We cannot help feeling that anything can only once be discovered, and that the one who has priority in publication is the one entitled to the discovery, and in this respect we still maintain that Sir Horace Davey was the discoverer of the anæsthetic properties of nitrous oxide, and not Horace Wells.

A CASE OF SPASMODIC NEURALGIA CURED BY EXCISION OF THE ALVEOLAR PORTION OF THE MAXILLA.—At a recent meeting of the Therapeutical Society of Paris, Dr. Josias brought forward a very interesting case of spasmodic neuralgia in a woman 60 years of age, of eight years' standing. The neuralgia occurred in very painful paroxysmal attacks, with contractions and convulsions confined to the muscles of the left side of the face. There was well marked tenderness over certain spots, especially at the point where the terminal branches of the fifth nerve emerge from the bones. In the left upper alveolar region pressure caused intense pain, rendering mastication impossible. Various remedies were tried with no avail, and when admitted into hospital she could barely obtain a few moments' rest by the combined use of morphia and sulphonal. The treatment consisted in resecting the affected alveolus by first excising the mucous membrane and periosteum, covering the bony parts, and then removing the affected portion of bone. Recovery was complete, and the patient has had no return of pain. Dr. Jarre, who has had some considerable experience in this matter, claims that the condition is almost always the result of a peripheral nervous lesion originating in the cicatricial process, which itself, in the majority of cases, is determined by suppuration of the alveolar tissue.

A QUESTION OF ETHICS.—The “Minor Notices” contain a report taken from the *Daily Telegraph* of a somewhat interesting action brought by a dentist against a patient for recovery of fees. In the course of his evidence the plaintiff states that according to the custom of the profession he retained the patient's top set of teeth, smashed them up, and allowed her £1 for the old gold plate. The case terminated by a decision in favour of the plaintiff for the sum claimed, £1 being allowed to the defendant for the plate which had been broken up. Whether the decision of the judge was correct or not it is not our desire to discuss, but one can hardly agree with the statement of the plaintiff that it is the usual practice to break up old sets, in fact, it does not seem desirable to pursue such a course unless the patient expresses a wish that way, for a denture left with a practitioner is still the personal property of the patient, and a dentist certainly has, we should think, no right to destroy it in any way. Such practices as referred to above do not tend to elevate the profession in the eyes of the public.

ELECTROZONE.—Under this name Dr. Bodecker describes a new preparation which in his experience give uniformly satisfactory results in the treatment of purulent condition of the dental pulp. Electrozone is a fluid, and is nothing less than sea or salt water which has been subjected to the electrolytic current. It is a clear liquid, neutral in reaction, and smells somewhat of free chlorine. As a mouth wash the author finds that it gives gratifying results but has one objection, viz., its disagreeable taste. This, however, can be overcome to a great extent by diluting it with 10 to 20 volumes of water, and in such strength it is said still to remain a powerful antiseptic.

IMPURE COMPRESSED OXYGEN.—According to a correspondent of *Nature*, compressed oxygen frequently contains a large amount of impurities. Having recently tested two commercial samples he finds them mixed in the following proportions:—Oxygen 65 per cent., and nitrogen 35 per cent.

PYROZONE.—In a recent number we referred to some of the dangers attending the use of pyrozone in dental practice.

The last issue of *Items of Interest* contains a note by A. M. Markle on the same subject. This gentleman states that he does not consider the chemical safe in any shape, as he has known a 25 per cent. solution explode while standing in a glass of ice water.

COMPOUND CAPSICUM PLASTERS.—The Dental Manufacturing Company have forwarded us some plasters made to the formula of Mr. G. W. Watson, of Edinburgh. It is claimed that these plasters give better results than those in general use, and in the few cases they have been tried they certainly fulfil to a great extent what has been predicted of them.

A MAMMOTH TOOTH.—*Items of Interest* contains the fact that a fossil curiosity in the shape of a mammoth's tooth, has been recently found in West Seattle by Joseph S. Richards. The tooth was discovered at the foot of a bluff, not far from the beach, and was covered with clay at the time, indicating that it had been unearthed by the breaking away of the hill. The crown of the tooth, which is of an oval shape, measures $7\frac{1}{2}$ inches in its largest diameter, $3\frac{1}{2}$ inches in its smallest diameter and 18 inches in circumference. The posterior edge of the tooth is 4 inches in length, the anterior edge 6 inches, the largest circumference 22 inches, and the weight $9\frac{1}{2}$ pounds. It is supposed to be the lower back tooth from the left side of the jaw. The ridges have turned to chalcedony, and extend entirely through the tooth, while the material between has the appearance of iron.

A DENTAL CIRCULATING LIBRARY.—C. Ash & Sons' Quarterly Circular contains the particulars of a dental circulating library which they have just introduced. The library will contain a full collection of all modern works on dentistry and allied sciences, and, in addition, a certain number of old and rare works upon the subject. It is intended to add new works and new additions as published, and subscribers are at liberty to retain books for any period within twelve calendar months. Should this new departure meet with satisfactory support, they intend, as time goes on, to enlarge the library and make it as complete as possible, so as to place every

dental book in the English language that can be obtained within the reach of their subscribers. Terms of subscription : for one volume at a time per annum, £1 1s. ; for two volumes at a time per annum, £1 10s. ; for four volumes at a time per annum, £2 2s.

COCAINE ANÆSTHESIA.—A recent writer to the *Dental Register* states that trinitrine used in connection with cocaine prevents, to a great extent, the toxic effects of this drug. The formula he recommends is as follows :

R. Cocaine hydrochlorate	...	...	...	20 centigrms.
Alcoholic solution of trinitrine	1	per cent.		10 gtt.
Distilled water	...	...	...	10 grms.

The following formula for trigeminal neuralgia is given in the *Revue Internationale de Médecine* :—

Butychloral hydrate	...	...	grms. ii. to v.
Alcohol, 40 per cent.	...	...	grms. x.
Glycerine	...	...	grms. xx.
Distilled water	...	...	grms. cxx. M.

To be administered in two to three teaspoonfuls of soup.

THE PREVENTION OF RUST.—The following method of preventing rust is given in the *Pharmaceutische Centralhalle* :—Dissolve one part of paraffin oil in two hundred parts of benzine. Wash the instruments and dry them in a current of warm air and dip them into this solution. They must then be laid on a plate in a warm room to dry.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations, have been admitted Licentiates in Dental Surgery :—Charles Herbert Ackland, Charing Cross and Dental Hospitals ; Norman Godfrey Bennett, Cambridge University, St. George's and Dental Hospitals ; John Butterworth, Owens College and Victoria Dental Hospital, Manchester ; Urban Edward Cave, Guy's Hospital ; Charles Cannell, Charing Cross and Dental Hospitals ; Ernest Fogg, Middlesex and National Dental Hospitals ; George Edward Frost, Charing Cross and Dental Hospitals ; John Herbert Gartrell, Charing Cross and Dental Hospitals ; Thomas Godfrey, Guy's Hospital ; Francis William

Hands, Masons College and Dental Hospitals, Birmingham; Herbert William Hardy, Charing Cross and Dental Hospitals; John Parsons Headridge, Owens College and Victoria Dental Hospital, Manchester; Herbert George Howitt, Guy's Hospital; Edward Hutson, Guy's Hospital; George Silva Jones, Charing Cross and Dental Hospitals; Francis Ernest Lewis Lambert, Guy's Hospital; Keith Foster Lane, Middlesex and Dental Hospitals; William Johnson Leigh, Charing Cross and Dental Hospitals; Lionel Frederick Morris, Guy's Hospital; Herbert George Newland, Charing Cross and Dental Hospitals; Harry William Norman, Charing Cross and Dental Hospitals; Walter Eriencus Partridge, University College and Dental Hospital, Liverpool; Edwin Picton, Charing Cross and Dental Hospitals; Walter James Pike, Charing Cross and Dental Hospitals; John Pilcher, Guy's Hospital; Charles Sydney Prideaux, Charing Cross and Dental Hospitals; Alfred Reeve, Charing Cross and Dental Hospitals; Norman Reeve, Middlesex and National Dental Hospitals; John Percival Rogers, Charing Cross and Dental Hospitals; Frederick James Faulkland Rooke, Middlesex and Dental Hospitals; Percival Reginald Sibson, Owens College and Victoria Dental Hospital, Manchester; Edward William Stabb-Johnson, Guy's Hospital; Arnold William Steynor, Mason College and Dental Hospital, Birmingham; Charles Talintyre, Charing Cross and Dental Hospitals; Walter Thomas Day Timms, Middlesex and National Dental Hospitals; Herbert James Torpey, Charing Cross and Dental Hospitals; Robert Watson, Charing Cross and Dental Hospitals; Joseph Ainsworth Woods, University College and Dental Hospital, Liverpool.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—Mr. F. E. Davies (Dublin), having passed the necessary examination, has been admitted a Licentiate in Dental Surgery of the College.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—We would draw particular notice to the fact that the dinner of this Society, which was announced in our last issue for February 5, has since been changed to Saturday, February 2.

THE next ordinary meeting will be held on Monday, February 5, when a paper will be read by Mr. Howard Mummery, on "Photomicrography in the Study of Dental Pathology and Histology." Casual communications will be brought forward by Mr. A. R. Colyer, Mr. W. E. Harding, and others.

THE honorary librarian announces that the Council is willing to dispose of some old surplus volumes, bound and unbound, as well as some odd numbers of the *Transactions*. The prices to members are : bound volumes, 5s. each ; unbound, 3s. each ; odd numbers, 6d. each. The prices to non-members are : bound volumes, 10s. each ; unbound, 8s. each ; odd numbers, 1s. each. The series is not perfect, and neither volumes nor numbers can be purchased for any year after 1888. Members desirous of obtaining any of the above to complete their sets of the *Transactions* are requested to send particulars to the librarian.

ODONTO-CHIRURGICAL SOCIETY.—The third ordinary meeting of this Society was held in the Rooms, 31, Chambers Street, Edinburgh, on Thursday, January 10, at 7.30 p.m., Walter Campbell, Esq., L.D.S., president, in the chair. Mr. Oswald Fergus, L.D.S.Glas., Blythswood Square, Glasgow, and Mr. W. G. Routledge, L.D.S.Edin., 8, Westmoreland Road, Newcastle-on-Tyne, were balloted for and elected members of the Society. Mr. Amoores gave a casual communication on "Some Notes upon the History of a case of Facial Neuralgia, diagnosed as antral in origin—with Treatment."

STRONG ammonia will remove the stains of iodine from the skin or clothing.

DURING 1892 and 1893, 251,000 were anæsthetised in German clinics ; the mortality in the case of chloroform being 1 in 7,924 and in that of ether 1 in 26,000.

A CONVENIENT way of keeping nitrate of silver ready for use is to soak asbestos fibres in a saturated solution and allow them to dry.

THE following new donations have been received or promised for the building account of the new Dental Hospital of London, Leicester Square, since the last list published in the Journal :—

	£	s.	d.		£	s.	d.
F. A. Bevan, Esq. (promised) ...	100	0	0	W. J. Griffiths... ..	1	1	0
Miss Sarah Aste ...	2	2	0	Mrs. Toogood ...	1	1	0
F. Richardson, Esq. ...	2	2	0	N. F. Dawe ...	1	1	0
Lt.-Col. Lambert ...	5	5	0	Mrs. Rutson ...	1	1	0
John Varley, Esq. ...	2	2	0	W. J. England... ..	1	1	0
Anonymous ...	26	5	0	Miss Emily Sharpe ...	1	1	0
J. F. P.... ..	10	10	0	S. Pegg, Esq. ...	1	1	0
Messrs. Coutts & Co....	21	0	0	Mrs. Bulling ...	1	1	0
J. Keith Rennie, Esq. ...	5	5	0	Rev. C. A. Heartley, D.D.	1	1	0
Mrs. W. E. Clarke ...	5	5	0	Captain Drummond ...	1	1	0
W. A. Maggs, Esq. ...	10	10	0	Mrs. Howard ...	1	1	0
Sir Dyce Duckworth ...	5	5	0	Charles Diffell, Esq. ...	1	1	0
Leopold de Rothschild, Esq.	5	5	0	Mrs. Dencke ..	1	1	0
Miss M. H. Palmer- Lovell	10	10	0	A. Winterbottom, Esq.	1	1	0
Miss Tennant ...	1	1	0	W. A. Hooton, Esq....	5	5	0
Henry Houseman, Esq.	1	1	0	Mrs. F. G. Smart ...	25	0	0
				Miss E. M. Jackson ...	5	5	0
				Lord Robartes... ..	5	0	0

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Unregistered Practitioners and the Public.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—The provisions of the Dentists Act—as stated by Sir John Lubbock in the debate on the second reading of the bill on February 19, 1878—were intended "to protect the public against quacks." Time has proved that in order to effect this the Act requires amending, for we all know that it does not protect the public against unregistered and unqualified men.

Every dentist must be aware of the incompetence of these men; and very often the people who seek their services are just those who cannot afford to spend money unprofitably, and then deplore the loss when they find how they have been taken in. I have lately had several patients who have been to some of these unregistered men, but they all said they thought Mr. So and So was a *proper* dentist, whereas the word dentist was not on the door plate, but only the

usual "high class artificial teeth." These unregistered men are unfortunately increasing and not decreasing, and I know of instances where they send an assistant in the country districts to make a house-to-house visitation, asking in a pedlar-like manner if they "want anything in the dentistry line."

There is no doubt about the public being misled--they soon are--and they believe in the *superior* abilities of these men and are attracted by their glowing advertisements, and think they are patronising pushing men, up to date, and that those who do not advertise are old fossils, and behind the times.

A local newspaper gives at this season of the year a sort of Christmas box to its advertisers, and I enclose you a piece where the editor praises and recommends these empirics to its readers; thus the public need protection, and this can be done by a clause to prohibit any person not duly registered from practising dentistry or any branch of dentistry; for dentistry can never be a learned profession in the eyes of the public so long as unprincipled and unqualified men are allowed to pilfer their pockets and prostitute an honourable calling.

I am, yours truly,

December 20, 1894.

"YORKSHIRE TYKE."

On the Administration of Nitrous Oxide.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—In the last issue of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION are two very interesting letters on the subject of the administration of nitrous oxide. They are interesting from two standpoints: in the first place they open up the very important question as to whether dentists should administer nitrous oxide without the attendance of a medical man, and in the second place they are interesting from the fact that they take up opposite views of the case.

Now, I should like to know what reasons can be adduced against a qualified dentist giving gas. I do not know of any valid reasons being brought against it, but there certainly are some very strong reasons to be brought in favour of it. In the first place it is, as Mr. Baudry-Mills says, "the dentists' anæsthetic (*par excellence*)," and there is no doubt about it that a dentist is much better qualified to administer it than the ordinary general practitioner, as a dentist in his student days has become thoroughly used to its administration, whereas a medical man often has not seen it given till he is called upon to administer it, while the dentist operates. In the second place, with a large percentage of patients the fee is a very important

consideration ; such patients would willingly pay the dentist his fee, but cannot afford to pay the medical man his fee as well, and there is this important fact to be taken into consideration, that as the charlatans and quacks die out one by one, the ground will be free from the advertising humbugs of the present day, and in the place of them will be the qualified dentists. What does this mean? Why, it means that the qualified dentists will not then, as they mostly do now, be able to get the better-class practice, but there will have to be some who will have to be content to work at moderate fees, so as to meet the requirements of a large class of people who have very moderate incomes, therefore if a dentist cannot administer gas, a number of people who cannot afford the two fees will have to go to a dental hospital, which would neither be fair to the dentist nor to the hospital. In the third place, there is the almost absolute safety of its administration, that should anything of an unforeseen nature occur, the dentist ought to be able to do just as much as a medical man could under the circumstances ; if he cannot, he ought. It ought to be made a very important part of his examination, so that before he is granted his diploma he ought to have satisfied the examiners on this subject. Then when he does administer gas, he ought not to shrink from the responsibility of having the patient's life placed on his hands, knowing that that life depends to a very great extent on his knowledge, ability and skill. Then, should the worst come to the worst, and he is unfortunate enough to have a death in his operating chair, if he has done all that it was possible to do, he ought not to fear the consequences, or, to put it in the words of your correspondent, "that should accident occur, the consequences are similar whether N₂O be administered by a general practitioner or by a dentist, an inquest must take place in either case, and a verdict be entered in accordance with the facts."

I think this position is a much more courageous one than that somewhat hysterical one assumed by Mr. Baudry-Mills when he says, "What kind of a figure would a dentist cut in the event of a coroner's inquest being held on a patient, who might have happened to die in his operating chair, if it were found that he had administered gas alone, that is, of course, without another qualified (?) man's presence? 'I guess it would be a case of being bad for the coo.'"

Yours sincerely,

GEORGE FOSTER.

30, *Paradise Street, Birmingham.*
January 2, 1895.

Dental Advertising.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I have to thank the Brighton Dental Society for a contribution of £5 5s., and the Plymouth Dental Society for £3 10s towards the expenses of bringing cases before the General Medical Council as well as several other gentlemen who have sent donations, but who have not specially given me permission to publish their names. I shall be glad to receive a great deal more yet. All the money has been banked to a special account.

We have to thank the *Pall Mall Gazette* for the sustained interest it is taking in laying our case before its readers, and I sincerely hope it will not have to announce that the General Medical Council could not act upon its resolutions because the lethargy of the dental profession could not be aroused to supply funds to present cases in a legal and proper manner, upon which it could safely exercise its jurisdiction.

I shall be pleased to send my collection of advertisements to the secretary of any Dental Society for exhibition to the members, in order to prove the necessity for their suppression, on the understanding that he take the greatest care of them.

I am, Sir, yours, &c.,

HENRY BLANDY.

Tough Leathery Bread Crusts.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I shall be grateful if some of your readers will kindly inform me as to the pathological conditions, which so frequently make the eating of the crust of bread, even in moderate quantities, painful to the jaws and teeth of children, some adults, and old people.

In my article on "Bacteria in British Baked Breads" in the *Lancet* of December 8, 1894, I showed how tough and leathery are the crusts of British breads, which are so apt to be blackened and burnt or reduced to carbon, like soot, instead of being crisp, brittle and easily masticated like the crusts of many better baked foreign breads.

Although harder than the crusts of British breads, nevertheless biscuits, being brittle and crisp, can be often eaten in large quantities by individuals who are unable to masticate the tough leathery crusts of British underbaked breads.

I should also be glad to have references as to home and foreign literature, if any, on this subject, as well as for detailed information, either addressed to me privately, or by your courtesy in the columns of your Journal.

I am, Sir, yours, &c.,

J. LAWRENCE-HAMILTON, M.R.C.S.

30, Sussex Square, Brighton.

January 5, 1895.

BOOKS RECEIVED.

THE TEETH OF TEN SIOUX INDIANS, by Dr. Wilberforce Smith.
London: Harrison and Sons, St. Martin's Lane, 1894.

WHAT ART CAN DO FOR US, by W. H. Williamson, M.D.
Aberdeen: 1894.

Dominion Dental Journal, Guy's Hospital Gazette, Transactions of the Guy's Hospital Dental Society, The Medical Review, The Medical Press and Circular, The Dental Cosmos, The Chemist and Druggist, The Pharmaceutical Journal, Revue Internationale de Médecine et de Chirurgie Pratiques, Items of Interest, The Kidderminster Shuttle, The Dental Register, The Transactions of the Odontological Society, Deutsche Monatsschrift für Zahnheilkunde, Vierteljahrsschrift für Zahnheilkunde L'Odontologia, L'Odontologie et la Revue Internationale d'Odontologie, Correspondenzblatt für Zahnärzte, C. Ash and Son's Quarterly Circular, Skandinaviska Tandläkareföreningens, Tidskrift, The International Dental Journal, The Students' Journal of the Liverpool Dental Hospital, Transactions of the Odonto-Chirurgical Society, Dental Record, British Journal of Dental Science, The Dublin Journal of Medical Science.

Letters and other Communications received from:—

Royal College of Surgeons, Ireland; J. A. Lees; Herbert B. Ezard; J. J. Davey; G. D. D. Darby; J. A. Lees; J. F. Pink; George Foster; Sec. Central Counties Branch; Registrar of the Royal College of Surgeons in Ireland; F. V. Richardson; H. Blandy; J. Lawrence-Hamilton.

APPOINTMENTS.

C. S. HULL, L.D.S.Eng., to be Dental Surgeon to the Royal Victoria Dispensary, Northampton.

C. F. BADCOCK, L.D.S.Eng., to be Professor of Dental Surgery in the Medical College, Madras.

HARRY OWEN, L.D.S., to be Hon. Dental Surgeon to the Kidderminster Hospital, *vice* Clifford Batten, resigned.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 2. FEBRUARY 15, 1895. VOL. XVI.

Amalgams.

THE question of the value of amalgam as a filling has again been brought prominently to our notice by the excellent practical paper read by Mr. Charles Tomes before the Odontological Society in January.

This paper is the outcome of a long series of experiments with this material, carried out in a thoroughly scientific manner, and tends to throw more light upon the right methods of using amalgam than any contribution that has come under our notice for years past.

No material used in dental surgery has been more abused in practice than amalgam, although when used in suitable situations, and with an intelligent appreciation of its capabilities and limitations, few are superior to it in durability.

A clear understanding of the properties of amalgams is necessary to ensure success in their use; the mere

insertion of a plastic mass in a carelessly-prepared cavity will not lead to success with this material, and many of the failures we see are due to want of sufficient attention to the shaping of cavities, and the conditions to be observed in mixing and inserting the filling.

Amalgams contract, and also undergo a further change of form while setting—but it has long been known that palladium amalgam, apart from certain drawbacks to its use, produces a sounder filling than any other combination of a metal with mercury which we are able to employ. Mr. Tomes points out that the reason of palladium being such a good material is that it sets very quickly, and as it can be burnished down at the edges when nearly hard, it is made to fit the cavity accurately when the contraction during setting is nearly complete.

In the experiments under consideration, the author's aim was to procure a similar condition of quick setting in ordinary amalgams, and a perusal of the original paper will show the steps by which this desired condition was obtained.

Careful applications of the ink test to fillings made in moulds, conclusively showed that amalgams mixed moist or dry, or partly moist and partly dry, inserted in a dusty condition or very plastic, and the excess squeezed out in the cavity as advised by Dr. Bonwill, were not proof against this test—they all showed considerable leakage. If, however, scraps of old amalgam waste were again heated until little beads of mercury appeared upon the surface, they could be inserted into the moulds while warm and rapidly condensed; this old material set very rapidly, could be burnished and finished at once, and resulted in sound ink-tight plugs.

In practice, however, this was found to be very difficult of application, the material setting so rapidly, that a large

filling, or one in a cavity difficult of access, could not be finished before it was too hard to be manipulated. It was however, found that a mixture of fresh plastic amalgam with old heated amalgam, in the proportion of one-half or one-third of the old material, gave results almost as good, many of these mixed plugs standing the ink test thoroughly well. In practice it was found that these mixed materials, although they set very rapidly, gave time for careful insertion, and admitted of being burnished and finished in one sitting. By these means the advantage of a quick-setting amalgam is gained and shrinkage is avoided. We are all too familiar with the defective edges of old amalgam fillings, indicating that they have shrunk from the walls of the cavity, and any method that enables us to remedy this defect will be hailed with pleasure, as there can be little doubt that amalgam, apart from these improved methods of manipulation, has, when carefully used, proved a most valuable material, and in frail cavities, and in those difficult of access, preserves a tooth perhaps better than any other material known to us.

The profession is much indebted to Mr. Tomes for his clear exposition of the results obtained by his experiments.

A FORM OF GUTTA-PERCHA AS A FILLING MATERIAL.—In the *International Dental Journal* a method is given by Dr. Stoddard for preparing a gutta-percha filling material which softens at a low heat, but becomes hard after being in the mouth a short time. Knapp's sheet gutta-percha is used, and after being cut into strips is allowed to remain in a solution of oil of cajeput and chloroform, equal parts, for two or three days. It is then warmed until thoroughly softened, and plaster of Paris added until the whole mass becomes of the consistency of putty. After this it is well kneaded in the hands, rolled into strips and allowed to remain in the open air in order that the chloroform and cajeput may evaporate.

ASSOCIATION INTELLIGENCE.

Representative Board.

A MEETING of the Representative Board was held at 40, Leicester Square, on Saturday, February 2, at 3.30 p.m. Present: Mr. S. J. Hutchinson in the chair; Messrs. W. E. Harding (Shrewsbury); T. E. King (York); T. A. Goard (Exeter); Breward Neale and F. W. Richards (Birmingham); R. Rogers (Cheltenham); F. V. Richardson (Brighton); R. P. Lennox (Cambridge); J. T. Whatford (Eastbourne); Alex. Kirby (Bedford); J. Ackery, Storer Bennett, W. H. Coffin, D. Hepburn, W. Hern, E. Lloyd-Williams, J. H. Mummery, S. Spokes, C. S. Tones, J. S. Turner, R. H. Woodhouse, W. H. Woodruff and W. B. Paterson, Hon. Sec. (London).

The minutes of the last meeting were read and signed.

Letters expressing inability to attend were read from Messrs. Bowman Macleod, H. Blandy, G. Brunton, G. Cunningham, A. Kendrick, L. Matheson, Rees Price and I. Renshaw.

Upon the resumption of the discussion, "On the Advisability of establishing an Examination in Mechanical Dentistry for Students before the Commencement of their Hospital Surgical Practice," the Hon. Secretary read a communication from Mr. Matheson, who had moved the adjournment at the last meeting, as follows:—"It is possibly open to question whether a special examination before the commencement of hospital practice would be the best way of improving the mechanical training of dental students, though as far as I can see myself, such an examination ought to be of great value. Certainly it must be painfully evident to all those who have opportunities of testing the knowledge and ability of men who are supposed to have learned mechanical dentistry for two years or more, that such training as most students receive is lamentably in need of improvement. And if a strong expression of opinion on the part of the Representative Board might be expected to have any weight or influence with examining bodies, it would, I should think, be well worth while passing a resolution, with the object, first, of strengthening the hands of those colleges that feel the necessity of improving the mechanical education of dental students, and second, of indicating generally the very great importance that must always attach to a proper and thorough training in mechanical dentistry."

Mr. TONES considered the time hardly ripe for the establishment of such an examination. At present there was no evidence before the Medical Council on the subject of dental examinations, and in view of the proposed inspection of such examinations throughout the kingdom, possibly during the present year, he thought it might well stand over. At the same time he admitted it might to some appear a desirable thing for the Medical Council, when considering the

question, to have a resolution from the Association to strengthen their hands.

Mr. WHATFORD, in answer to the President, said he had only seconded *pro forma* the resolution of Mr. Cunningham, which was before them.

Mr. SMITH TURNER said that he had seen no reason to induce him to alter his mind upon the subject. He still held that as Members of the Representative Board, it would not be wise for them to give authoritative statements on a question affecting dental education. He thought more good might come of it if those who possessed an intimate knowledge of educational requirements, *e.g.*, the Deans of the Dental Schools, Lecturers on Mechanical Dentistry, and others in earnest on the question, settled it in conference amongst themselves.

The HONORARY SECRETARY read a letter from Mr. Cunningham, stating that "the Medical Committee of the National Dental Hospital, after due notice and discussion, had unanimously adopted a resolution similar to that now before the meeting."

Mr. SPOKES thought Mr. Cunningham must be slightly mistaken, for although he was unavoidably absent from the meeting referred to by him, he had heard that his colleagues approved of an appeal being made to the Provincial Schools, with a view of eliciting a more general opinion on the question.

Mr. ACKERY said that, fortunately or unfortunately, he was primarily responsible for the origin of the discussion on the question before them, because his resolution on the advisability of establishing such an examination, which he, at the time, considered to be purely abstract in character, had been carried at the Newcastle Meeting. He agreed with the opinion expressed by Mr. Turner, on the question from the point of view of carrying it out practically.

Mr. RICHARDS was of opinion that the matter was one which might be settled by the different teaching schools and the Colleges of Surgeons.

Mr. HARDING moved that the discussion be postponed *sine die*.

Col. ROGERS seconded.

Motion carried *nem. con.*

The TREASURER in his interim report stated that the total number of members on January 1 last was 850, that sixty-three members were in arrear with their subscriptions for last year. He then brought up the report of the Journal and Finance Committee on the Balance Sheet.

REPORT OF THE JOURNAL AND FINANCE COMMITTEE.

At a meeting of this Committee held on Monday, January 28—present, Mr. S. J. Hutchinson in the chair, Messrs. D. Hepburn, W. Hern, E. Lloyd-Williams, R. H. Woodhouse, W. B. Paterson, and W. H. Woodruff—the Treasurer's accounts for the year ending Dec.

THE BRITISH DENTAL ASSOCIATION.

RECEIPTS AND EXPENSES ACCOUNT FOR THE YEAR ENDED DECEMBER 31ST, 1891.

Dr.

Cr.

GENERAL ACCOUNT.				GENERAL ACCOUNT.			
To Rent (one year)	£	s.	d.	By Subscriptions	£	s.	d.
" Secretary (Mr. Pink), one year	30	0	0	Less One-third taken to Association Journal	873	1	6
" Audit of 1893 Accounts	50	0	0	Account below	291	0	6
" Legal Expenses (16 cases)	6	6	0				
" Expenses of Annual Meeting	173	15	7	By Interest on Deposit at the London and	582	1	0
" Stationery and Printing	120	4	0	County Bank	4	5	10
" Postages, Directories, Registers, Gratuities	43	11	2				
" and Sundries	30	9	2	ASSOCIATION JOURNAL ACCOUNT.			
				By One-third Subscription as above	291	0	6
				" Sale of Copies	55	14	0
				" Advertisements	373	9	5
ASSOCIATION JOURNAL ACCOUNT.							
To Printing and Publishing	612	11	3				
" Reporting at Branch and Annual Meetings,							
and other Societies	37	0	8				
" Editor's Salary	14	3	9				
" Sundries	764	11	8				

31, 1894, were read and considered in detail, and the Balance Sheet approved.

The Balance Sheet had been circulated to the members. He would like to read a letter from the auditors, and should afterwards be happy to answer any questions that might be put to him.

THE BRITISH DENTAL ASSOCIATION ACCOUNTS FOR 1894.

DEAR SIR,—We have the pleasure of enclosing these accounts, duly signed, together with the vouchers and pass-book. The other books shall be sent to the hospital in due course.

You will see by the accounts that while there is a slight increase in the amount of subscriptions received, and no sum to be written off for good-will this year, the expenses of the general account are £30 less, thus showing this account to be £132 to the good. The legal expenses are heavier, some of the items really belonging to last year; but the annual meeting cost £66 less, and the general printing and stationery £100 under last year. In connection with this head we notice that there are no charges for school case-books and Association Transactions at all this year. We presume this is correct. There is also no return made for sale of "Dental Quackery" pamphlets. The sale is probably dying out.

In the Association Journal Account there is a slight increase in the advertisements, and the printing bill is reduced by more than £100 under last year, and the item of reporting is £6 less, if all accounts are in for this work. The loss on the Journal is therefore only £44 instead of £78 as last year. Messrs. Bailliere's account was correct, save a small error against themselves, which they let stand. In the free advertisements we notice about 5½ pp. during the year for Messrs. Bailliere's books—two small advertisements marked "error, no charge," and six small ones marked "Association account for widow of a dentist." The number of Journals freely distributed each month has been about fifty, except for April, when seventy were sent out, and September, when 71 went out. Messrs. Bailliere state that the first figure included fifty extra sent to advertisers with the Editor's sanction, and the latter covered twenty sent to the various hospitals, by permission of the Association.

Congratulating the Association on the improved position of affairs this year,

We are, dear sir,

Yours faithfully,

J. W. BUTCHER & Co.

50, Praed Street, London, W.,

January 25, 1895.

Col. ROGERS, in moving the adoption of the Report, felt sure that all members would be glad to see that the financial resources of their Association were in such a prosperous state, and that they had made progress, as shown by the comparison of the Balance Sheet of the last year with that of the preceding.

Mr. BREWARD NEALE seconded.

Mr. RICHARDS desired to know whether the Journal account had ever shown a profit?

The TREASURER replied, Yes, £4 6s. 1d. in 1883. He did not regret the deficit altogether, because he considered it of very great importance to the Association to maintain a high standard of excellence for the Journal.

Mr. RICHARDS asked whether it was proposed to increase the cost per copy to non-members of the Association? And also whether the good-will asset was now wiped out?

The TREASURER replied that no such proposition had been before them. And with regard to the good-will asset, 1894 had seen the last instalment paid off on its account.

Mr. SMITH TURNER remarked upon the heavy rate the postal authorities compelled them to pay, something like 2½d. a journal, whereas the *British Medical Association Journal*, a weekly issue, only cost ½d.

The TREASURER said the monthly postages on the journal alone amounted to over £70.

Mr. COFFIN ventured, on the point raised, a suggestion that the Publishing Committee should approach the Postmaster-General, and in the event of no reduction of cost being obtained through him, it might seem advisable to the Association to establish a weekly journal.

The PRESIDENT pointed out that then 2d. a month at least would remain as the cost of postage.

Mr. COFFIN said he must confess what he had uppermost in his mind when he made the suggestion, was rather the unique character of a weekly journal in dental literature, than the question of cost.

The motion that the Balance Sheet be received, adopted and printed in the Journal was then agreed to.

Mr. E. LLOYD-WILLIAMS proposed the re-appointment of Messrs. Butcher and Co. as auditors. Mr. COFFIN seconded, and this was agreed to.

The PRESIDENT then explained the progress of affairs in connection with the proposed Medical Acts Amendment Bill as far as the dental profession was concerned, and asked for an expression of opinion as to further improvements. He wished it to be understood, that those entrusted with the conduct and management of the business, were less anxious to hear details of the way in which this or that should be done than to receive general suggestions.

A short discussion followed, in which Messrs. Breward Neale, Hern, King, Spokes, Turner, and the Hon. Secretary took part. A letter was also read from Mr. Blandy.

The PRESIDENT referred to the resignation by Mr. Woodruff, of the Treasurership, and read Mr. Woodruff's letter in answer to a request that he should continue in office until the Annual Meeting, in which he regretted his inability to do so, as he could not go to Edinburgh, and desired to be allowed to date his retirement from

December 31, 1894, the end of the financial year of the British Dental Association, thereby leaving matters, as he considered, clearer for the new treasurer. The President said he believed Mr. Woodruff had never missed a single Board or Committee Meeting.

The TREASURER : Yes, one.

The PRESIDENT : Well, one in a term of four years was not a bad record, he ventured to think. He wished to make it known that their Treasurer had done all the clerical work connected with his office himself, besides his duties in connection with their various meetings. As a speaker in their debates he had always said the right thing at the right moment, and his courtesy was admitted by all. He felt sure that the Board, in parting with one who had shown such excellent administrative ability, tact, and good feeling, did so with much reluctance. He (the President) was so closely associated with Mr. Woodruff in his duties that it was with sincere regret he rose to make the unwelcome proposition, "That the Board accepts the resignation by Mr. Woodruff, of the office of Treasurer, with much regret, and many thanks for his invaluable services."

Mr. WOODRUFF said the President had been too magnanimous in the kind speech he had made with regard to his humble abilities. He could not express in words his feelings on such an occasion in a manner at all adequate to his sense of them. He would only say, therefore, that his duties had been to him a pleasure, and if he had done anything, however small, to advance the best interests of the Association, he was more than pleased. He begged to thank them all. He could not sit down without tendering his thanks, also, especially to his brethren of the acting executive, with whom his relations were most cordial.

The PRESIDENT read the bye-law referring to the appointment of a Treasurer, which empowered the Board, in the event of a vacancy occurring between Annual Meetings, to make an appointment subject to confirmation at the next Annual General Meeting.

The Business Committee begged to recommend Mr. E. G. Betts as one who had expressed his willingness to undertake the duties of Treasurer. In asking their endorsement of this recommendation he felt that they could not have as Treasurer a man more worthy than Mr. Betts, and they must feel greatly indebted to him for so kindly allowing his name to be brought forward in connection with this arduous post. He, therefore, had the very greatest pleasure in moving, "that Mr. Betts be appointed Treasurer of the British Dental Association."

This was unanimously agreed to.

Eighteen candidates were elected members of the Association. The proceedings then terminated.

Metropolitan Branch.

THE Annual General Meeting was held on the 23rd ult., the President (Mr. ROBT. H. WOODHOUSE) in the chair.

The minutes of the previous meeting having been read and signed, the TREASURER read a satisfactory Report and Balance Sheet, which was adopted on the motion of Mr. C. ROBBINS, seconded by Mr. H. ROSE.

The Council nominated Mr. Frederick Canton for the office of President-elect, and that gentleman was unanimously elected by the meeting.

Messrs. R. H. Woodhouse, J. H. Mummery, E. G. Betts, J. H. Badcock and W. Rushton were nominated for election on the Council. Messrs. W. H. Coffin and H. Baldwin were appointed Scrutineers.

Mr. C. ROBBINS then read a communication on "The Use of Crystal Mat Gold," as follows:—

MR. PRESIDENT AND GENTLEMEN,—It goes without saying that the millennium of our dental profession is not within view yet, mainly because the *ideal* dental filling has not been up to the present forthcoming, save in the advertisement columns of our dental journals. A careful student of this literature will find that it meets his eye there at every turn. White fillings that are not acted upon by the oral fluids—amalgams that never shrink or change colour—gutta-perchas that never disintegrate, and lastly, a royal preparation of the royal metal described as a "dream in gold." Coming back to facts as they are presented in daily practice, we find ourselves getting hardened and sceptical in this matter, being forced to the conclusion that, for the present at any rate, the *ideal* filling *is not*. The requirements of the *ideal* filling are so many, and the difficulties are so great, that, hopeful as we wish to be, the realisation of our dream is still a long way off. However this may be, one is inclined to be at times prophetic, and declare that the *ideal* filling must be—owing to the nature of its demands—a *combination one*, in the which the tender tooth structure may be covered with a material compatible with itself, having a coating of metallic substance, easily applied, and when finished, able not only to bear the burden of mastication, but equal to the resistance of the constant action of the oral fluids, crowded as they are with the ever active micro-organisms. Up to the present no metal has greater advantages than gold; at the same time, its application, especially in tooth structure of inferior quality, is teeming with difficulties. The thought has occurred to many of us, why cannot we have the comforting oxyphosphate and the durable gold in combination? But with pellets or with foil this has been anything but a success.

Some three years ago my attention was directed to crystal mat gold, but having failed with other forms of crystal gold, I approached

it with some amount of timidity. Soon, however, I caught my friends' enthusiasm, and made many experiments in the mouth, at first using it for starting cavities in place of the old retaining points. I gradually got bolder, until to-day I use it for the first third, and in some cases, for the first half of every gold filling. In small pinholes it is unequalled, and can be as readily manipulated almost as amalgam; the way in which it spreads under the instrument is a revelation. For *starting cavities* I know of nothing equal to it; one can bid farewell to the old starting or retaining points, much to the relief of the tooth pulp. A moderate pit or undercut will prove ample, nor is it necessary to sacrifice so much of the tooth structure as formerly. Another advantage is the absence of *balling* or *rocking*. But the cases in which one uses it to the greatest advantage, both to patient and operator, are those where under ordinary circumstances one would hesitate to attempt gold at all; I refer to those teeth where we have practically only a shell to deal with.

Crystal mat gold is principally supplied to us in the block form—somewhat resembling the shape of a flattened brick on a small scale—having a certain amount of porosity before compression. This porosity lends itself to the method I am about to describe.

We will take as our supposed case an upper incisor, decayed to such an extent lingually, that after clearing away all disintegrated dentine, we have the labial wall of enamel only remaining, and this so thin and transparent that our excavator can be distinctly seen through. Under ordinary circumstances he would be a bold man who would attempt to fill this with tape from beginning to end. It has been, and is done, but in such cases one scarcely knows whether one should admire such an acrobatic feat in dental surgery, or pity both patient and operator. The simpler and more humane way is, I think, as follows. The cavity being prepared, three or four blocks of mat gold are slightly annealed ready for use, then a soft mix of Weston or some other oxyphosphate is made; this is neatly passed into the cavity at its weakest point; immediately place the mat blocks right on to this, making sure that the cement does not rise over the gold surface, impressing the blocks down lightly, so as to force the cement into the part desired; a few puffs of hot air will hasten the setting of the cement, so that in less than half a minute one can condense the gold down from the surface, using broad finely serrated hand pluggers at first, and later smaller ones near the edges of the cavity. Should any of the tooth edge be touched by the cement, it can be now cleared away, and we have a foundation of gold firmly fixed to the tooth structure, upon which we can build easily either mat, pellet, or tape gold. I prefer to have a layer of small pellets next, especially in the undercuts that have been left at the cervical and cutting edges of the cavity, and after the gold has been built up to nearly the level, to complete with tape, exchanging the hand

pressure for malleting. The result is equal in surface wear to one made of tape all through, having a lining of supporting cement, completed in half the time, with less violent treatment of either pulp or tooth structure, and one in which thermal changes do not count for much. I do not advocate this material for exaggerated contour work, although I have under my observation cases of moderate contour that have stood the test of two years, in the which mat gold was used from start to finish. At present I prefer to finish off always with tape. It is very necessary to keep the material before use from the atmosphere, or it may be found to crumble under the plugger or mallet. I usually keep it in one of the small glass flasks, with a good cork, putting out only as much as I think may be necessary for the operation in hand.

Gentlemen, I do not wish to be egotistical, but I have faith to believe that if you will give this method a fair trial, your arduous labours will be lightened, more frail teeth will be filled with gold, you will be to your patients more of a comfort, and to suffering humanity a friend.

Mr. B. GILL had had some experience with and still uses crystal gold. He began in 1873, and although he had a great dread of being one of those who get into a groove, he confessed he had never yet found any gold to work with such satisfaction as the old crystal gold. His objection to "mat" gold is because of its decided tendency to crumbling. Crystal gold is put up in four different grades. Mr. Gill detailed instances of particular fillings inserted with crystal gold which had stood for many years. Crystal gold, carefully and honestly manipulated and thoroughly understood, would make a good filling. Finely serrated pluggers were not necessary except on the outside.

Mr. H. G. READ asked how Mr. Gill's fillings were condensed.

Mr. GILL commences with hand pressure, but practically all the work is done with a Snow and Lewis mallet, having the blow regulated.

The PRESIDENT spoke highly of work he had seen done some years ago by Dr. Bellisario, of Sydney, who used crystal gold with foil on the top.

Mr. HUMBY asked as to the method of starting the filling. He thought that one of the advantages of such gold was in its fibrous nature, by which it sunk into osteo.

Mr. ROBBINS replied that he started small cavities with mat gold.

Mr. GILL said he found it as easy to commence with crystal gold as with ordinary soft gold.

Mr. REINHARDT thought that mat gold was another form of crystal gold, that was, gold crystals between two hard layers. He criticised finishing with foil. Crystal gold was quite good enough for that.

Mr. W. HERN asked whether these stoppings had not a tendency to become "pitted." Some years ago he had made experiments with crystal gold. Had such fillings been tested with the ink test? He

was surprised at the results announced. An eighth of an ounce packed in two hours, as in one of Mr. Gill's cases, would lead him to think there was not thorough condensation and solidity.

Mr. REINHARDT thought the "pocking" was due to imperfect condensation. The text-books were the cause of this, for they tell us to put in a piece as big as the cavity would take; it was quite impossible to expect it to be properly condensed under the circumstances.

Mr. CUNNINGHAM said that twenty years ago Dr. Sheffield worked entirely with crystal gold, and he had seen some fillings in perfectly good condition. It depended upon the personal factor. He thought that mat gold differed from the old crystal gold; it was more amorphous under the microscope.

Mr. W. H. COFFIN said there was one little statement he would like to modify, as no one else had taken it up. His father was a large gold worker, and had always taught that if crystal gold was used as non-cohesive gold for commencing cavities there was not a genuine adhesion between the non-annealed and the later annealed gold. The serrated instruments gave an impression of adhesion, but it was doubtful if this was real, and mistakes and disappointments might arise in this way.

Mr. GILL replied to this, and said he had tried experiments. He thought one could get adhesion between foil and crystal gold.

Mr. ROBBINS also replied.

The PRESIDENT announced that, as a result of the ballot, Messrs. J. H. Mummery, E. G. Betts, J. H. Badcock and Robert H. Woodhouse had been elected on the Council. He then delivered his

VALEDICTORY ADDRESS.

GENTLEMEN,—Although our branch of the Association is as yet too young to speak much of its traditions, it has so far been the custom of the retiring president to deliver a short valedictory address ere vacating office. The period since I entered on my duties has flown with such wonderful swiftness, that I cannot realise a whole year has slipped away since the change in the presidentship took place.

I trust that substantial progress has been made in our branch. There has been a goodly increase in the number of our members—twenty-two in all.

The meetings seem to note the times of the four great seasons of the year. The Spring Meeting, in response to a most generous invitation from the Southern Counties Branch to each member of ours, was held conjointly at Brighton, and was successful in every respect.

At the Summer Meeting, held at the National Dental Hospital, the authorities having kindly placed it at our disposal, we had in turn the pleasure of welcoming many of our Southern *confrères*.

It is quite strange to note how the amenities of dental life unravel themselves when standing around the operating chair. The meetings to which I have referred brought out many good operators and con-

sequent clinical benefit to the onlookers, although at the latter meeting no formal papers were read.

The Autumn Meeting afforded a capital discussion on "Superior Protrusion," the subject being introduced by Mr. Storer Bennett, who was able to illustrate a typical case by an excellent series of models. Mr. Rushton described a case of marked acromegaly, and Mr. Hern, Mr. Greetham and Mr. Denison Pedley also brought forward interesting communications.

Having alluded to Spring, Summer and Autumn, we have now reached once again our Winter Meeting, and our thanks are due to those gentlemen who have assisted us this evening. I tender my best thanks to the Members of Council for their regular attendance ; to our excellent Treasurer, and last, but by no means least, to our secretary, Mr. Sidney Spokes, in whom so much of the life blood of our branch has its source. As President-elect, we are glad to have Mr. Frederick Canton, who has filled so many of the important offices of our profession with universal credit.

Having briefly alluded to the little corner of the dental world with which, as members of this branch, we are more immediately connected, let us for a moment look around. What is the condition of our profession in a wider sense, and whither are we trending ?

The practice of medicine is described by Dr. Samuel Johnson as "a melancholy attendance on misery, a mean submission to peevishness, and a continued interruption of joy and pleasure." To a great extent, we must, I fear, admit that these statements apply also to our branch of the healing art. In no branch, however, of that art are cause and effect so closely related as with us. We have not often the great stake of life and death immediately before us, but we have, daily and hourly, passing through our hands the power of establishing and modifying the conditions that lead to one or the other. The standing of our profession in the estimation of the public will be what its votaries choose to make it ; narrow views of its aim and objects will assuredly recoil on those who are short-sighted enough to possess them. It is not the advance made in a single year that will count for much. Our existence, as in any sense an organised body, is but of yesterday. No two decades of incorporate development can we as yet call our own.

Let us not then be over-discouraged by the disgraceful advertising and blatant self-assertion that we see around, and so repel all men of fine feeling. It is almost exclusively amongst those who could not now enter our ranks, and must be gradually diminishing. It is gratifying to feel that the Medical Council are fully roused in this matter, and I believe our interests are safe in their keeping.

We had self-thrust aboard our dental ship at starting on her voyage in 1878, many an undesirable companion, and now that we are well under weigh, and sailing gaily in mid-ocean, such must

be content to conform to the rules of the service or be treated as mutineers.

Let those who are dissatisfied with the present condition of things compare the medical profession now with its condition when registration was first adopted in the year 1815. Eighty years have created a marvellous change, and I think we too may be proud of what has taken place in less than a quarter of that time. The zealous guarding of the portals of our profession must be maintained—it is this, I believe, to which we must look with greatest hope, and the visas on the passports of those entering our ranks granted alone, after thorough examination, and the technical side of which must in no way be disregarded.

The great Arabic surgeon, Guy de Chanliac, more than five hundred years ago, wrote these words; "Knowledge is created by additions; the same man cannot lay the foundations and perfect the superstructure; we are as children carried on the neck of a giant; aided by the labours of our predecessors, we see all that they have seen and something beyond."

Take for example, too, the glorious cathedrals that rise on all sides—the pride and beauty of our land. Many a generation was often needed ere their completion, but none the less assiduously were the foundations laid by those who could never hope to see the placing of the coping-stone.

When this century, so prolific in its desires for the alleviation of all that tends to cause needless suffering to mankind has passed away, an account of its medical progress will no doubt be written by the impartial historian. Then will the pages on dental surgery bear testimony to the advances made from the many evils we have seen, and borne, with more or less patience or impatience in our day and generation. And now to quite another aspect of our subject. Whether we accept the topical views of the "Ascent of Man" through the ancestor that was said by the greatest of modern naturalists to be "a tailed quadruped, probably arboreal in its habits," or whether we believe in the "Descent of Man" first created in the image of his Maker, certain it is that morphological and pathological changes are rapidly taking place, and the dental surgeon is now indispensable in the modern domestic circle. Is it evolution or is it devolution that is taking place, and accounts, amongst the primates, for *homo sapiens* having in his mandibles the dire effects of more bacterial battles and deformities than any other mammal? This great question forces itself upon us at every turn.

Last spring when in Cairo I carefully examined the splendid collection of mummies in the Gizeh Museum, some said to be nearly 4,000 years old. Such fine facial angles and dentures might be well envied in this nineteenth century. What the antiquity of the human race may be it seems impossible to say, and also how far

environment may have influenced physical development. It is, however, almost certain that the human race is not *more* remote than the post-glacial period. In matters dental, however, the earliest and most savage races seem to have all points in their favour. This argument is sustained by the most recent researches of fossil or "quaternary" man, whose remains are found in the caves of the South of France and elsewhere, and were probably antediluvian and contemporaneous with the mammoth and woolly rhinoceros, all disappearing in the same mighty cataclysm. The skulls of the Canstadt and Cro-magnon races are probably the oldest known in the world, and all anatomists and archæologists admit the high and essentially *human* character of both. The Cro-magnon crania are exceptional in their capacity, and some of the skeletons represent a race far finer than any at present known to exist.

Take again a leap in time and come to the Celtic race that inhabited these islands prior to the Roman invasion. Even in these, decay and deformity are rarely found, while with us the virulence of the former often makes us well nigh despair, and represents, I fear, one of the many penalties of our modern civilization. This, however, opens up a subject far too large for me to do anything but touch upon. In my own experience I think I can trace the most imperfect teeth development and rapid decay in the offspring of those who live at high nerve tension, and utilise all the means of turning night into day that the ingenuity of man has devised, alas! to his own physical detriment. Let us but hope that some true light may ere long shine in on this dark subject.

Now, gentlemen, I must say farewell, and make way for my friend and colleague, Mr. Lloyd-Williams, and I wish all success to him, and to you during the coming year.

Mr. E. LLOYD-WILLIAMS, in taking the chair, said that although there were probably many members present who revelled in radical proclivities, yet he ventured to assert that not one was not sufficiently conservative to conform most loyally to the precedent laid down at the Branch, viz., that the incoming President should not make a speech. They had in this respect been merciful in two directions; they had spared the President the heart-burning attached to the delivery of an address, and they had been still more merciful to themselves in avoiding the infliction of listening to it. He would do no more, but could certainly do no less, than very simply and sincerely thank them for placing him in the chair, and express the hope that their confidence might not prove to have been misplaced.

Mr. W. H. COFFIN as a Past-President proposed a vote of thanks to the retiring President, which was heartily carried, and to which Mr. WOODHOUSE briefly replied.

Southern Counties Branch.

A MEETING of this branch was held at the White Hart Hotel, Reigate, on Saturday, Jan. 26, 1895, the following being present : Messrs. J. H. Whatford, President (Eastbourne), H. Beadnell Gill, Vice-president (Norwood), Dr. Walker, President-elect (London), and Messrs. J. H. Reinhardt, W. H. Dolamore, H. W. Vanderpant, and F. H. Van der Pant (London), J. C. Foran, W. Barton (Eastbourne), A. Gabell, E. F. Gabell and F. H. Ellwood (Redhill), Martin Henry (Folkestone), G. O. Richards (Richmond), W. B. Bacon and W. T. Trollope (Tunbridge Wells), F. H. Vanderpant (Kingston-on-Thames), Morgan Hughes and B. A. Williams (Croydon), W. Harrison, J. Wood, D. E. Caush, W. R. Wood and F. V. Richardson (Brighton), F. J. Dumayne (Lee), Arthur King and A. Curling Hope (Guildford), T. A. Tait (Tenterden), and others.

The minutes of the last meeting were read and passed.

Letters regretting their inability to attend were read from Messrs. D. W. Amooore, Lawrence Read and J. H. Redman.

Mr. F. H. Ellwood read a paper on "Antiseptics in Dental Surgery,"* and Mr. E. F. Gabell read one on "Alveolar Abscess,"† both of which elicited a good discussion.

After the meeting was over members dined together, when a collection of £5 6s. 6d. was made for the Benevolent Fund.

Midland Counties Branch.

A MEETING of the members of this branch of the Association will be held on Saturday, February 23, at the Great Northern Hotel, Bradford.

There will be a meeting of the Council at 3.15 p.m., and the General Meeting will commence at 6 o'clock, when a paper will be read on "The Ethical Status of the Dental Profession," by Mr. Thos. Gaddes, M.D.U.S.A., L.D.S.Eng. and Edin.

A number of "Microphotographs of Dental Histology," by Dr. Chas. Röse and Dr. Alfred Gysi, will be shown by Mr. George Brunton. Also a new amalgam balance made in one piece.

Casual Communications are solicited.

The Annual Subscription (5s.) to the branch is now due ; members are requested to pay the same to Mr. G. G. Campion, Hon. Treasurer, 264, Oxford Road, Manchester.

* This paper is printed as an Original Communication.

† To be printed in a future issue.

The Bradford members invite the members and friends to tea at the Great Northern Hotel, at 5 p.m.

The collecting box of the Benevolent Fund will be passed round, to receive the contributions of the members.

I. RENSHAW, *Hon. Sec.*

Rochdale.

Special Appeal.—The Benevolent Fund of the British Dental Association.

At the request of the Honorary Secretary of the Benevolent Fund we publish the following :—

SIR,—The Managing Committee of the Fund have, from time to time, when considering income and expenditure, been struck with the fact that comparatively few members of the Association are *annual* subscribers to the Fund. They think that this must in part be due to inadvertence, or ignorance of what good is being done, and (as this is the only charity available for dentists) they have sanctioned an appeal at the present time, to be addressed to members of the British Dental Association who are *not yet subscribers* to the Fund.

The Committee are of course grateful that many contribute at meetings, dinners, &c., but it is to *annual* subscriptions that they must look for their reliable income. Many Branches have been most energetic in making after-dinner collections, and to such efforts not a small part of the income has been due. Appeals at meetings, dinners, and through the Journal, have from time to time been made with considerable success, but it has been mainly due to the *additional efforts of those who were already subscribers*. During the past eighteen months nearly 100 new annual subscriptions have been obtained, but with that addition there are now only 242, out of 847 Members of the British Dental Association, who support the sole charity connected with the Association and the dental profession !

It may not be out of place to give a short account of the origin and establishment of the Benevolent Fund.

When the Association was first formed, one of the objects mentioned in the Articles of Association was the encouragement of a Dental Benevolent Fund for the relief of decayed

and necessitous members of the profession. A circular to test the measure of support was issued in December, 1882, and in September, 1883, the establishment of such a Fund was agreed upon, and it was considered that a capital of £5,000 and annual subscriptions to the amount of £250 should be easily obtained, and not a few thought this a very moderate estimate. The view of the sub-committee at that time is just as forcible now, viz., "That to make the Fund a success, a *general* interest in its work is necessary, and it will best be secured by the smaller contributions of the many, rather than by the larger sacrifices of the few." It was reported that in response to the above-mentioned circular the amount promised was: in donations, £435 5s. 6d., and in annual subscriptions, £72 16s., and this as the result of aid from eighty-one men only, or about 20 per cent. of the then members of the British Dental Association.

This was then considered nothing more than "encouraging." Let us contrast the position after the lapse of eleven years. We have now 242 annual subscribers (being about 28½ per cent. of the members of the British Dental Association) giving about £300 in subscriptions and £70 in donations; the interest on investment bringing the income up to about £400. We have about £1,300 invested instead of the £5,000 hoped for in the infancy of the Fund. Many in the early days held aloof from the undertaking until they had some evidence as to how the Fund would be administered. The Annual Reports from time to time have given details of the work done, but, lest ignorance of its working be now a hindrance to any, it may be well to give a brief summary of the work during the past year.

During that period twenty fresh applications have been received; one case was refused as being ineligible, the applicant being unregistered. Two cases were helped with advice only, as their circumstances did not require immediate pecuniary aid; five cases were rejected as being undeserving; the remaining cases were relieved according to their merits, and with due regard to the limited means at the disposal of the Committee. More satisfactory results could have been obtained in many cases if the Committee had more money to disburse. These, together with others still on hand, make twenty-six cases receiving pecuniary help during the past year, and in many instances there were several members in each family. Five children were aided to secure election at orphanages, and a broken-

down dentist, aged 54, was helped to obtain a home for life. The education of six children is being paid for, and the expenses of a musical education are in part defrayed for another who will shortly be enabled to earn her livelihood by teaching. A weekly sum for maintenance is being paid for a young man who, through the interest of the Fund, and the kindness of professional sympathisers, was, some two years ago, accorded free mechanical pupilage and free curriculum at a dental hospital.

Three lads who had been apprenticed have lately gone out into the world, having had the first essentials provided for a successful career. Several have had grants to tide them over critical periods, to pay arrears of rent, &c. Some nine or ten others, from old age or inability to earn a living, must practically be looked upon as permanently dependent on the Fund.

If the reserve could be raised to an adequate amount, such cases as the last-named might become annuitants, but as the Committee cannot grant money in anticipation of the yearly income, these poor persons are in constant dread lest their grants should cease.

To repeat the words of those who, prior to its formation, spoke strongly in favour of starting the Fund, "The Association stands pledged to the establishment and support of a Benevolent Fund."

None but those who come into intimate contact with such cases can fully appreciate the sad misery which really exists, or estimate the amount of relief which has resulted from the help administered in the past.

Your Executive would gladly do more had they the power, and it is sincerely hoped that this appeal may not be issued in vain. Donations may be made to any amount: annual subscriptions vary from 5s. to £5 5s.

Please pause one moment and consider what small privation a fraction of your income bestowed on this charity would be to you, and what an inestimable blessing to those who are in need!

Donations and Annual Subscriptions will be gladly received by the Hon. Treasurer, Mr. A. J. Woodhouse, 1, Hanover Square, W., or by

Yours truly,

JOHN ACKERY, *Hon. Sec.*

11, *Queen Anne Street, Cavendish Square, W.*

P.S.—All cases are strictly investigated, and the Committee acknowledge gratefully much assistance rendered by the Charity Organisation Society.

ORIGINAL COMMUNICATIONS.

Antiseptics in Dental Surgery.*

By F. H. ELLWOOD, L.D.S.

DURING the past decade, whilst scientific research has been most active in all directions, an almost unprecedented progress has been made in that most wonderful and useful of modern instruments, the microscope, and in the development of microscopy. Not only so, but a very active body of investigators has been attracted, chiefly from the medical, surgical, and dental professions; besides, too, the medical curriculum now enjoins that a certain standard of expertness be reached in this subject by all who seek to fill the ranks of that profession.

Coincident with this advance in microscopical science, the study of better sanitation, of bacteriology, and of the causes of disease, have developed to such an extent, that treatment has had to be altered, or modified, from that of nearly entire empiricism to one of more precision, and operations in surgery, as well as in dental surgery, are now undertaken with comparative impunity, which were formerly attended with only the remotest chance of success. Moreover, it is even hinted at with a certain amount of reasonable probability, that, at no great distance of time, diseases which are now a very scourge to mankind, such as cholera, tuberculosis, typhoid, &c., will cease to decimate populations, either by the discovery of means to enable the leucocytes, or, more properly, phagocytes to wage war, or by destroying the ptomaines, toxines, enzymes, and other bacterial products, or even, perhaps, by the annihilation of the microbes themselves. Dr. Aitken says that "we are standing in view of the promised land." Well, all this is very satisfactory indeed to watch, but we, as dentists, must move with the times, and not suffer our own progress to be in any way marred by inattention to the need of aseptic conditions, owing to over-pressure of work in the daily round of our duties. We cannot all be Millers, Kochs, Pasteurs, Tomes, or Mum-

* Paper read at a meeting of the Southern Counties Branch, Reigate, Jan. 26, 1895.

merys, neither can we easily afford, perhaps, to give up our little leisure to the sedentary devotion and application so necessary to the successful manipulation of one-sixths, one-twelfths, and other high powers of the microscope. But it is to our profit, and the safety and interest of our patients, to note, very carefully, the conclusions and deductions of distinguished bacteriologists, and apply the lessons so learnt in our *modus operandi*. Indeed, in these days there is no excuse whatever for the evasion of reasonable precautions against infection, as our armamentarium does not merely consist of a little arsenic, creosote, and tannin as in bygone days, but may appropriately be selected from a long tabulated list of bactericides, whose exact potencies have become widely known through the painstaking experiments of Miller and others. Allow me, humbly but sincerely, to express my conviction "That we ought not from any inadvertence to be the unconscious, but possible, agents of propagating syphilis, neither ought we to become the easy *via media* for the introduction of the bacillus tuberculosis from one patient to another." A list of cases of such infection are reported in "Micro-Organisms of the Human Mouth;" and on this topic (in the *Cosmos* for 1891, p. 525) Professor Miller says:—

"The dentist, or surgeon, who communicates a disease, perchance syphilis, to his patient by the use of an impure instrument, has a burden of sin upon him, greater than which there are but few. Besides, exquisite cleanliness and absolute freedom from germs constitute half the battle in many operations in dentistry, as well as in surgery."

We are told that of the bacteria of the air nineteen-twentieths are dead, and therefore inactive, yet the surgeon, before making an incision, takes care to wash and sterilise the region to be operated on. How much more need is there, then, for antiseptics to be used in the mouth, which is a "hotbed of infection," a very "chamber of cultivation," before commencing the extraction of teeth?

I have already alluded to the published bactericidal potencies of dental materia medica, but I may mention that there are other important considerations, which must ever weigh with us in determining what to use in any particular case, and somewhat bearing on this subject, you will please allow me to quote Dr. Alexander Edington (*British Medical Journal*, May 11, 1889), who arrives at the following conclusions:—

"From a consideration, it is to be noted the two principles of prophylaxis and cure of sepsis in surgery are each specifically distinct from the other, and further, that certain agents capable of being used efficiently as prophylactic against, are absolutely useless as curative agents of sepsis, if once it gets a start in a wound. In other words, *germicide* and *antiseptic* are two very different terms."

And, to illustrate my point further, we will take the case of corrosive sublimate, whose germicidal strength is almost without a rival, yet from its proneness to decomposition when in contact with metallic substances, as well as from its tendency in ordinary solution to precipitate albumen, and thus place an almost impermeable sheath of albuminate of mercury in the inside of root canals, I very much question whether a tithe of what is used for this purpose is efficacious—either as a germicide or as an antiseptic—its deservedly high repute notwithstanding. On the other hand, iodoform, which has been shown by Miller, Mummery and others, to allow certain bacteria to grow all over and around its crystals, in cultivable media, is simply invaluable clinically, probably owing to its power in destroying bacterial products.

Again, we not infrequently meet with tremendous obstacles to complete and thorough disinfection, as, for instance, in tortuous, and sometimes almost infinitesimal root canals, where it would be well-nigh impossible to guarantee, either that all the infected contents had been removed, or that an ordinary application of a germicide, however potent, had reached to the apical foramen. Such cases are, fortunately, far from hopeless, and *le dernier ressort* is to fall back on some volatile, pungent, essential oil, or its stearoptine, even if of low germicidal potency, and to assist its diffusion with the warm air syringe.

In order to enter the arena of discussion, and to elicit the experience of others more competent than myself—both with regard to materials and methods—which is my only hope of any real and practical usefulness accruing from the reading of this paper, I will respectfully submit to your notice, *seriatim*, a few measures for disinfection, which experience has prompted me to recommend, as well as the antiseptic treatment, which should, in my judgment, prove satisfactory:—

A Dennant jar, or similar vessel, containing a reliable disinfectant, should stand in a convenient spot in the operating

room, so that one is constantly reminded that into this, after washing and wiping each, should be put mouth-mirrors, forceps, excavators, scalers and all similar instruments, and there left as long as possible, to ensure no risk of infection. Boiling in a 2 per cent. solution of carb. soda has been recommended and is easily accomplished in the winter, but is a plan scarcely likely to meet with adoption during hot summer weather.

Saturated aqueous sol. of hydronaphthol, liquefied carbolic acid undiluted, or iodic hydrarg. solution, 1 in 2,000, all answer well.

Extractions.—Before an extraction is attempted, the mouth should, as far as possible, be rendered aseptic; a warm antiseptic wash should be used immediately after an extraction, and the patient advised to follow up such treatment until the socket heals.

Miller's saccharin mouth-wash, permanganate of potash, or listerine is to be recommended.

Impression trays, after the removal of the composition, and cleansing, should be disinfected by boiling in water for fifteen minutes. The composition, however, should be brushed under a tap, and afterwards stored till required for moulding, in an aqueous sol. of sublimate, 1 in 1,000.

Cavities for Filling.—These should be disinfected, even when all traces of decay can be removed, dried with warm air, and kept dry during the operation. For front teeth, where staining would be seriously objectionable, I think it best to keep to H_2O_2 , but of the 20 vols. strength and not the ordinary 10 vols. At the back of the mouth, and where the filling material is compatible, sublimate in absolute alcohol, 5 grs. to 1 oz., may advantageously be employed. But in teeth from which it is not practicable to remove all traces of infected dentine—and we meet with many such—a thorough sterilisation should be obtained by sealing up in the cavity for twenty-four hours, if possible, either the alcoholic solution of perchloride of mercury, or finely powdered sulphate of copper; or, in sensitive teeth, warm liquefied carbolic acid should be allowed to deposit its crystals all over the surface, by the evaporation of its moisture with warm air.

Fetid Root Canals.—Much of our difficulty with regard to thorough disinfection of the mouth is caused by grease, there-

fore, as a preliminary measure, after, of course, reaming out canals, I have found caustic potash (liq. potassæ P.B.), by saponifying their contents, greatly facilitates the removal of the *débris* on bibulous paper; after which, $H_2 O_2$ (20 vols.) should be applied several times and wiped out with bibulous paper; lastly, iodoform in terebene, or some essential oil, introduced, the cavity sealed up and patient dismissed for one week, unless untoward symptoms should in the meantime occur. If necessary, this treatment should be repeated.

Root filling with gold, or other material of no therapeutic value, except, perhaps, in artificially devitalized teeth, is, undoubtedly, in the light of the present day, not by any means to the patient's advantage.

Salol, which liquefies at 107° , is very useful as a root filling. It can be syringed into the canal while liquid, and in a few minutes a solid antiseptic root filling is left, which is insoluble in cold water.

And, now, gentlemen, I have to thank you most sincerely for your patience and kind attention. I hope that I have not been too prolix, and I ask you to forgive me for not bringing anything more original before you, but there are some lessons that we cannot any of us learn too often, and one of these, I feel sure, is the necessity of "Antiseptics in Dental Surgery."

Notes on a case of Meningitis following Suppurative Disease of Antrum.

By LOUIS JEFFERY, L.D.S.Eng.

I AM indebted for the following notes to a medical friend under whose care the patient came. The case is one of especial interest to us as dentists, as it shows what serious results sometimes arise from comparatively trifling ailments if from any reason the diagnosis be obscured. The patient in question presented all the features of the tuberculous diathesis, and in addition had a strong family history of phthisis, and the symptoms complained of were in the first instance attributed to this disease. Later on, when brain trouble arose, it was diagnosed as arising from a cerebral abscess of tuberculous origin, and this was also the opinion

of a consulting physician who was called in when matters became serious. The facts of the case are as follows:—

"On *Nov.* 17 a clerk, aged 30, consulted me for an attack of persistent neuralgia, accompanied by bronchial catarrh, night sweats, and general emaciation, traceable, he thought, to a chill contracted at the seaside two months before. The patient had a decidedly cachectic appearance, and knowing that on the father's side there was a history of phthisis, I carefully examined the lungs, which I found normal. I prescribed a course of arsenic and cod-liver oil, and sulphate of quinine night and morning.

"On *Nov.* 24 the patient complained of much pain over the eyes and in the occipital region; also of vertigo and constipation. I therefore changed the medicine to salicylate of soda with alkalies.

"*Nov.* 25.—Vertigo, with trembling of legs and hands, were noticed; patient could not stand.

"*Nov.* 26.—Trembling more marked; articulation indistinct; a painful swelling over left malar process was complained of.

"*Nov.* 27.—Articulation clear, but occasional delirium present.

"*Nov.* 29.—Temperature 101° ; pulse 100; inflammatory swelling over left malar process well marked and very tender.

"*Nov.* 30.—Temperature 98.4° ; pulse 84. Rambling delirium is still present, but patient understands when spoken to. Tongue moist; abdomen tense and tender. A slight discharge of sanious pus (whether from nose or mouth uncertain) had been noticed on pillow.

"*Dec.* 1.—Temperature normal; pulse 76. Patient in a semi-unconscious state. Vomiting occurred to-day for the first time, also hiccough.

"*Dec.* 2, noon.—Temperature 99.2° ; pulse 140; respiration 60. Cheyne-Stokes breathing well marked. Coma absolute. Pupils equal; size of each $\frac{1}{8}$ in. 9 p.m., left pupil dilated to about $\frac{1}{8}$ in. in diameter. Right pupil as before.

"Copious escape of pus from right nostril (patient's head inclining to that side) continuing till shortly before death at 10 p.m.

"*Post-mortem* made *Dec.* 4.—No abscess or any other cause for the suppuration was found within the cranium. Menin-

gitis (non-tubercular) was present ; also the lateral ventricles were one-third full of serous fluid ; otherwise the brain was healthy.

"On removing the roof of the antrum of Highmore, and passing a probe down, it came upon dead bone in the left antrum ; in the right antrum the lining membrane was intact.

"The suppuration had apparently originated in the left antrum, the inflammation in which had set up the fatal meningitis. Carious teeth were found on that side, and these probably formed the starting point of the inflammation."

LEGAL INTELLIGENCE.

Death under Nitrous Oxide.

MR. J. PARKER, district coroner, held an inquest at the Preston Royal Infirmary, relative to the death of Amy Budden, a domestic servant, 23 years of age, lately living at 25, Ribblesdale Place, who died suddenly at the surgery of Mr. N. Miller, dentist, Fishergate, on January 12, under circumstances as set forth during the inquiry.

EDMUND BUDDEN, cashier, Hampton, near London, identified the body of the deceased as that of his daughter. He said she was a domestic servant. He believed she enjoyed good health, and had never heard any complaint of feeling weakly. Her mother died suddenly, and an inquest was held over her.

Mrs. WILLAN, wife of Mr. Councillor Willan, 25, Ribblesdale Place, said that deceased was her servant, and had been in her employ since last July. She was an exceedingly good girl, and most regular in her habits. About five minutes to seven deceased left home to go some errands, and was expected back very soon. As she had not returned at eight o'clock witness began to wonder what was the matter. Deceased had not mentioned that she was going to have a tooth extracted, nor had she ever complained of toothache. Some time ago deceased said she thought of going to the dentist, and witness asked her to let her know before she went. Her reason for asking that was that she did not think deceased very strong. The matter was never mentioned again. When engaged deceased said she did not feel very strong, and thought the place would suit her on that account, as the duties were light.

By Mr. MILLER : The girl's waist was compressed, and witness had asked her whether she was tight-laced, but she replied that she was not.

Mr. WILLAN asked permission to put a question to his wife, and,

this being granted, he asked whether witness believed the girl's statement as to not being tight-laced.

Witness said that she did, as there were no other symptoms.

Mr. NATHANIEL MILLER, surgeon dentist, 95, Fishergate, said that deceased called at his surgery a few minutes to seven, and asked him to take out two teeth, an upper and a lower one. He examined them and found the pain to be caused by the lower tooth. Deceased wanted the gas, and from her appearance witness had no hesitation in administering it. Her appearance was quite normal. He therefore administered nitrous oxide gas, and she took it exceedingly well. She must have had good lungs, as in thirty-five seconds she was completely unconscious, and it was not unusual to take forty-five seconds. She would inhale about three and a-half gallons, the average quantity being from three and a-half to four gallons. The gas was administered in the presence of Mary Ritson, who was always present in the operating room to assist witness. The tooth was extracted, and the deceased's breath was normal throughout all the operation. In that state the patient was invariably very listless, and therefore he was not surprised that deceased remained listless after the operation. Deceased recovered thorough consciousness in about two and a-half minutes after the tooth was extracted. The first morbid symptoms he noticed was a slight pallor down each nostril, and spasmodic breathing, symptoms which alarmed him, and he at once applied nitrite of amyl. This was always given in the case of any heart affection, for the purpose of restoring it. He immediately sent for Dr. Collinson, and whilst the messenger was away, he resorted to artificial respiration. Dr. Collinson arrived within three minutes and at once injected ether. The deceased was then placed flat on the floor, and they commenced to unfasten the clothing. The corsets were so tightly laced that they had to be torn off. Hot towels were applied to the region of the heart, and artificial respiration maintained till ten minutes to eight. The doctor then applied his stethoscope and pronounced her dead. Witness had been in practice over twenty-five years, and during that time had administered the gas over a hundred thousand times. He had administered it that day many times previously, and had used the same gas to the previous patients. He had given the deceased gas before, and she had not suffered any ill effects then.

By the JURY: Had he noticed the deceased was tightly laced, he should not have administered the gas without asking her to unlace. He had already assured himself that the neck was free. In all his practice he had never had occasion to be anxious about tight lacing before. He had only known one death under the operation directly traceable to tight lacing, and that was the case of Lady Milne, at Edinburgh.

Mr. H. W. COLLINSON, 52, Willesley Square, said that on Saturday

night last he was summoned to Mr. Miller's to see the deceased. On arrival, he found Mr. Miller performing artificial respiration upon deceased, who was seated in the operator's chair. She was placed on the floor, and witness injected about 20 minims of ether. He asked the servant to unloose the clothing, while Mr. Miller continued the artificial respiration. Everything possible was done to restore animation, and at the expiration of twenty minutes witness listened over the heart, but could not hear any beating. Witness then held a cold mirror over the mouth, but finding no evidence of respiration he concluded that life was extinct. During the artificial respiration, air was heard to pass in and out of the lungs, showing that the passages were quite clear. Observing that the deceased was tightly laced, he asked Mr. Miller's maid to pull the corsets together as they properly ought to be drawn round the body, and found they did not meet by $4\frac{1}{2}$ inches. The measurement round the waist under the stays was 23 inches. She was wearing a No. 18 stays, a difference of five inches. On Sunday morning, assisted by Dr. Turnbull Smith, witness made a *post-mortem* examination of the body, which was well nourished, and showed no evidence of previous disease. Her height was 5ft. 2in., and the measurement round the lower part of the chest 28 inches, round the waist $23\frac{3}{4}$, and round the lower part of the body 24 inches. These measurements were normal, and indicated a healthy foundation. Having described the appearance of the internal organs, witness said these denoted that the tight-lacing had been habitual, and he should call the drawing in to the extent of $4\frac{1}{2}$ or 5 inches excessive tight lacing. These conditions would interfere with full respiration and the proper use of the lungs. The cause of death was suffocation, the gas under the conditions stated interfering with the breathing.

By the JURY : It was probable that had she not been tightly laced deceased could have gone through the operation without harm.

By the CORONER : He did not know that he had ever in his medical experience met with a case of such excessive tight lacing.

Dr. TURNBULL SMITH, who assisted the last witness in the *post-mortem* examination, said he agreed with Dr. Collinson as to the cause of death. He believed the deceased would most likely have undergone the operation successfully had she not been tightly laced. He saw nothing else to account for death. He believed the amount of gas administered was a proper quantity.

MARY ADELAIDE RITSON, maid to Mr. Miller, in whose employ she has been since March last, said that after the tooth was extracted deceased recovered consciousness for about ten minutes, after which she turned very pale down the nostrils, and witness was sent for the doctor. Witness proceeded to corroborate the evidence given by Mr. Miller.

This was all the evidence, and the CORONER said that after going

somewhat exhaustively into the case it appeared as if death was due to misadventure.

The jury found that death was brought about by misadventure from asphyxia whilst under the influence of nitrous oxide gas, and was the result of excessive tight lacing. They added that they did not consider Mr. Miller in any way to blame, but that he conducted the operation satisfactorily.—*Liverpool Mercury*.

Nisi Prius Court.

(Before Mr. Justice Cave.)

OBSTRUCTING LIGHT AND AIR.

CHASTEY v. ACKLAND.—In this action the plaintiffs, the Misses Chastey, lodging-house keepers, of 23, West Southernhay, claimed damages from Mr. Ackland, surgeon dentist, for interfering with the proper enjoyment of light and air.

Mr. H. E. Duke and Mr. Philpotts, instructed by Mr. Hertzell, were for the plaintiffs, and Mr. E. U. Bullen and Mr. Foote, instructed by Mr. C. T. K. Roberts, for the defendant.

Mr. Ackland is the occupier and owner of the house adjoining plaintiffs', and up to June, 1894, he had a wall about 9ft. in height and a small narrow building abutting on Bedford Street. At the back of both buildings is the Rifle Volunteer drill hall. On June 22, defendant commenced to erect new premises on Bedford Street, and plaintiffs made inquiries as to his intentions. On June 30 they gave notice that these buildings would seriously interfere with the light and air of their house. The work was proceeded with, and the contention was that a landing window had been deprived of light, that the kitchen staircase had been made dark and dangerous, and that by the exclusion of air the basement of the house was rendered unsanitary, and lodgers complained of the smells which arose.

Plaintiffs were called in support of this statement, and his Honour Judge Edge gave evidence to the effect that he lodged at 23, West Southernhay, and that since the new building was erected he had noticed an oppressiveness about the air which was not observable before.

Evidence was given by Mr. Charles Dobell, Mr. J. Morgan Pinn (architects and surveyors), and Dr. Woodman (medical officer of health), Dr. Harris, and Dr. Bremner, to the effect that there was not a free current of air now as there used to be, and Mr. Arthur expressed the opinion that whereas the premises were probably worth £900 two years ago they would not now fetch more than £750 or £800.

His Lordship, during the interval for luncheon, viewed the buildings.

During the early part of defendant's case, he said he did not attach much importance to the question of light, and evidence of experts was

called to show that there had been no undue interference with the air current.

Dr. Davis, medical officer of Bristol ; Dr. Davey, Dr. Kempe, medical officer of Exmouth ; Messrs. Vheland and Russell Coombe, surgeons ; Dr. Wade, Torquay ; Mr. C. E. Ware and Mr. Commin, architects, and others were called to show that there had been no interference with the air current to make the premises in question unsanitary, or injurious to health.

Mr. T. MARTIN, house agent, said in his opinion the value of the property had not been affected by the change made.

His LORDSHIP, in giving judgment, said he was of opinion that the light of the window in the staircase had been affected, although not to a great degree. If the case rested there it would be met by defendant paying £10 and costs, and he would maintain his new building. The question of air, however, was involved, and there was no doubt the basement of plaintiffs' house was damper and the rooms stuffier than before. The defendant's new building interfered with the current of air, and he should therefore grant an injunction against Mr. Ackland, with costs. He hoped the parties would be able to come to a compromise to prevent the building, which had evidently cost so much to erect, being pulled down.—*The Western Morning News.*

Crewe County Court.

(Before His Honour Judge Hughes, Q.C.)

A CLAIM FOR FEES.

RICHARD BAXTER BOOTH, dentist, of Crewe, claimed from Ralph Lees, formerly of Gorsty Hill Hall, the sum of £4 for professional services rendered to the defendant's daughter.

Mr. A. G. Hill appeared for the plaintiff, and Mr. W. Chester for the defence.

Mr. HILL explained that the claim was in respect of professional service rendered to the defendant's daughter in 1890. She called upon Mr. Booth, and asked him what it would cost to have her teeth attended to. He estimated that his services would be £4, and she would have to get the consent of her father. She again saw the plaintiff, and led him to understand that her father had consented to the sum named. The plaintiff had repeatedly sent bills addressed to the defendant, but no notice had been taken of them. When the defendant lived at Gorsty Hill Hall he kept a carriage, and his daughters frequently drove into the town.

Mr. CHESTER : But the keeping of a carriage won't affect this young lady's teeth.

Mr. HILL (continuing) said Mr. Booth attended to the young lady's teeth on the distinct understanding that it was with her father's consent, and that he would be liable for the cost.

The JUDGE: But the consent ought to have been in writing, or something more definite.

Mr. HILL: My client has waited with all patience. He has sent bills in from time to time, and received no payment.

His HONOUR: Or acknowledgment?

Mr. HILL: We have. My client met the defendant in the street, and he said, "Oh, I am coming to see you about my own teeth some day."

The plaintiff gave evidence in support of Mr. Hill's statement, and was about to describe what his charges were for, when

Mr. CHESTER, interposing, said: We don't want to know what you did with this young lady's mouth.

The plaintiff (continuing) stated that when he last remitted the bill he demanded payment.

Mr. CHESTER produced a bill made out to Miss Lees, and Mr. BOOTH explained that he made it out in Miss Lees' name because it was for her that the work was done. He, however, addressed the envelope to her father.

Replying to Mr. Hill, the plaintiff said the defendant called upon him the previous evening, and offered him £2 10s. in settlement of the account.

The defendant said his daughter did not go to the plaintiff with his authority, and the offer of £2 10s. was contained in a letter from his daughter to Mr. Booth. He was in the habit of supplying his daughters with money for their own personal use. His daughter was 22 years of age when the debt was contracted, and he denied having given his consent.

His HONOUR nonsuited the plaintiff, without costs. — *Crewe Guardian*.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE usual monthly meeting of this Society was held on the 14th ult., Mr. F. CANTON (President) in the chair.

The minutes of the previous meeting having been read and confirmed, the following gentlemen were balloted for and duly elected members:—John William Pare, M.D., C.M.Edin., L.D.S.Eng., 18, Portland Place, W. (resident); F. E. Davar, L.D.S.I., Church Gate Street, Fort, Bombay, India (non-resident).

The following nominations were proposed to the Society for membership:—A. E. Baker, M.R.C.S.Eng., L.R.C.P.Lond., L.D.S.Eng., 22, Grosvenor Street, W.; Percy Francklin Henry, L.D.S.Eng., 79, King William Street, E.C. (resident); Ridley Herschell, L.D.S.Eng., 6, Seaside Road, Eastbourne (non-resident).

Mr. ANDREWS brought forward a case of odontome of the upper jaw occurring in a youth aged 17. The odontome, on removal by Mr. Rushton Parker, of Liverpool, in April, 1893, measured $1\frac{1}{2}$ by $1\frac{1}{4}$ inches. The patient made a complete recovery. The odontome was sent to him for microscopic examination. He found that its weight was about 500 grains. The main body was dentine, though of very irregular character, full of openings and canals, with patches of enamel. There was very little cementum, but a few lacunæ occurring in parts. A number of photo-micrographs were exhibited on the screen in illustration of the communication.

Mr. MANSBRIDGE described two methods which he had found useful in treating cases of drainage in antrum trouble. In one case in which, from the position, a rigid tube was impracticable, owing to the exceptional sensitiveness of the walls of the opening, the tube was made separate from the plate, and the vulcanite plate made to tap the hole. There was no possible chance of food being forced up into the antrum, and the patient was able to syringe the antrum through the tube by simply removing the plate. Models were exhibited of the case, and also of a case in which the opening into the antrum being very high up on the outside of the gum, where a rigid tube would have been out of the question, a movable tube was adopted, the opening being made at the side, so that all chance of food being forced up was overcome.

Mr. C. S. TOMES read a paper on Amalgams, of which the following is an abstract :—

The subject of the behaviour of amalgams is one that has for many years been to me very interesting, and so long as twenty-two years ago I read a paper upon it before this Society, establishing upon an exact experimental basis that, almost without exception, amalgams contracted as they hardened. The experiments described in that paper were mainly based upon the specific gravity method of ascertaining what, if any, change of bulk took place during the process, and certain conclusions were reached as to the beneficial effects of the addition of gold and platinum to the alloys. In my earlier experiments I found that palladium alone was free from this vice of contraction. As is well known, palladium is far the best of all amalgams in its practical results, but it is difficult to use, owing to irregularity in the behaviour of different samples, and also owing to its exceedingly rapid setting, which almost precludes its use in really difficult situations. Moreover, though it does not stain the tooth, it itself becomes of an inky blackness. I allude to this because I think that it is quite possible that some of its merits are due to this rapid setting, by which it results that the filling is hard, and no further change has to take place after it leaves the operator's hands; to this I shall have occasion to recur at a later stage of the enquiry.

My present series of experiments have been devoted, not to the

improvement of the constitution of amalgams, but to the means of getting the best results with those in ordinary use, and they have for the most part been conducted with Eckfeldt and Dubois' standard amalgam, that being known to be a good one ; it contains, as is well known, tin, silver, copper and gold.

Previous experiments having satisfied me that Dr. Bonwill's method of inserting the amalgam fairly plastic, and squeezing it dry in the cavity by the repeated application of pads of bibulous paper, removing from time to time the softer portions into which the excess of the mercury had been squeezed, gave upon the whole the best results as to water tightness, this method was usually employed ; though a good many experiments were made with Mr. Kirby's method, viz., using decidedly plastic amalgam for the bulk of the cavity, and finishing with some that was very dry, the idea being that in this way the mercury would be most evenly distributed through the mass finally. In order that the experiments should compare fairly with one another, a great number were made in round holes about $\frac{1}{4}$ inch in depth and $\frac{1}{8}$ inch in diameter ; these were bored right through slips of bone or ivory, which were clamped on to a flat surface of ivory whilst being filled, and then at once plunged into an ink pot (Draper's ink--condemned by Dr. St. George Elliott as being too severe a test--being usually employed) ; in every single instance I got more or less leakage. I began by packing amalgams (standard and flint edge) into cavities, and examining the surface under low powers of the microscope, and was a little surprised to find that no matter how dry the amalgam, and no matter how carefully it was burnished, the surface is soon covered with little hemispherical eminences ; this applies not only to the original free surface, but to that which was in contact with the walls. But if it is burnished after it is set, these eminences are smoothed down, and the burnish remains. It seemed possible that the leakage of fillings when subjected to the ink test might be due to this irregular surface, and so I tried lining the cavity with a film of No. 10 gold. This had the effect of getting a surface, where the gold had been, of a much finer grain, but the fillings failed as badly, or nearly so, as before. Moreover, I found that the fillings were not really a very tight fit, but that they could sometimes be poked out through the holes without breaking the ivory slips, and that when these were broken, so as to leave about half the periphery, or a little more, the amalgam could be very easily dislodged from the remaining cavity. It seemed, therefore, clear that we had to do with a real shrinkage, and not with a surface too lumpy to make a water-tight joint.

Similar experiments were tried with tinfoil, and with a layer of a single thickness of heavier gold. I then tried lining the cavity with a thin, quite thin, layer of amalgam, and then filling up the rest of the cavity with Harvard cement, and now for the first time got an absolutely perfect result, thereby conclusively proving that the surface of

the amalgam was fine enough to be water-tight, and that it was to shrinkage or change of form that its faults were due. Experimenting further in this same direction, I found that it was possible to line the cavity thinly with amalgam, then fill up the great bulk of it with soft Harvard cement, and then coat the free surface with amalgam. This gave a very good result, so that we had here a plug the bulk of which was Harvard cement, with which there is never the smallest difficulty in getting water-tight fillings, encased in a shell of amalgam, which would serve to protect it against any chemical disintegration by the fluids of the mouth.

So far, then, the tendency of my experiments seemed to be in the direction of showing that amalgam was not, and could not be, a good material of which to make the whole of a large filling. I found that there was not much difficulty in lining the bulk of a cavity with a thin layer of amalgam, filling it nearly up with Harvard cement, and whilst this was still soft covering it over with a layer of softish amalgam—which, by the way, will adhere so well to the cement while this is still sticky, that it need be but of very small thickness.

It then occurred to me that it might be possible to embed something in the amalgam which, if it did not prevent its shrinking, might, at all events, compel it to shrink in some other direction than away from the walls, and with this end in view I made some rings of dental alloy, and others of steel, about pin wire size, and of such size that they, when laid flat in the holes, left only a small space between themselves and the walls. These were sunk in the amalgam, so that they just escaped showing on the surface. But although, perhaps, they effected a slight improvement, in spite of them the amalgam drew away from the edges enough to let the fillings leak, so after a good many trials I abandoned them as not so useful as I had expected. Next I tried embedding a lot of pieces of porcelain tooth in the mass, distributed generally through it, and here again met with failure to get quite perfect results, and the same thing was true when I used pieces of old set amalgam. Then I tried laying two or three thicknesses of bibulous paper in the cavity, filling with rather plastic amalgam, and withdrawing it before it was fully set; then, after keeping the filling just made—which was, of course, a little small for the cavity—till it was quite hard, it was re-inserted with a small amount of fresh amalgam round it so as to fix it in place. This having been found to be rather impracticable, I tried fixing the loose filling in place by means of rather soft phosphate cement, smearing the actual edges of the old filling with amalgam somewhat soft, so that none of the phosphate cement should crop out at the edges. In this way I was pretty successful in getting water-tight results, but it was a little difficult to manage.

So far, then, I had not met exactly with what was wanted, though I had learnt that it was possible, by minimising the quantity of new amalgam, to proportionately diminish the total shrinkage, and so to

get a better approximation to water-tight plugs. It is well known that a large number of amalgams which have already set will, like Sullivan's amalgam, soften again with heat, but they, or at all events most of them, set again with great rapidity—in fact, as soon as they are cold. Taking the standard amalgam, which, as containing some copper, seemed most likely to answer such a purpose, I softened bits of it in a Bunsen burner and rapidly rubbed them with a warm burnisher into some of the cylindrical holes. The result was an absolutely water-tight plug, but the rapidity with which it set rendered it very difficult, if not impossible, to use it in average amalgam cavities, or to contour it. But I also found that if the cavity were filled up so as to cover up the edges, it was possible to go on contouring with freshly mixed amalgam without interfering with its water-tight edges, and so the question seemed to be to some extent solved. By putting on one of Mr. Lennox's admirable matrices, it was not difficult to do this in an accessible cavity, but the difficulty of the very rapid setting remained, which rendered this of no avail in difficult positions; and, moreover, the high temperature of the pieces inserted would seem to limit its use to dead teeth, or to those thickly lined with an osteoplastic material. By adopting this method of using amalgam already set, and heated to soften it, a beautifully fine grained surface was always obtained, which retained its burnish although at once plunged into the ink, and the surface so obtained was wholly free from the spherical eminences which I noted as occurring with all freshly-mixed amalgams. I have employed this method in the mouth in a few cases, using a matrix to render it easier to get it up to a contour, and with results which, so far as appearances go, look after a few days most satisfactory as regards perfection of edge, &c., and I did not find it difficult, though, owing to my inexperience, I selected cavities thoroughly accessible.

The next step seemed to be—the difficulty of water-tightness being more or less solved—to find an amalgam which would, when re-heated, set a little more slowly. I first tried increasing the proportion of gold in the alloy, but this had no effect in that direction. Next I tried copper, in the form of Sullivan's amalgam, though as Sullivan's amalgam does not fulfil all our requirements, I was reluctant to add much; however, unless a large proportion of Sullivan was added I found that the setting still remained too rapid for convenience. It next occurred to me that perhaps some freshly-mixed amalgam might be added to the old heated amalgam without altogether losing the advantages which this seemed to offer; accordingly, I added an equal weight of fresh amalgam, mixed so as to be thoroughly plastic, to a piece of heated old amalgam, and rapidly rubbed them together in a hot mortar. The mix thus obtained was pretty easy to pack into a cavity, though it set rather too fast to be quite convenient. The resultant plugs proved to be generally water-tight. I next tried

adding double the amount of freshly mixed amalgam, and still was able to generally get water-tight plugs, whilst there was ample time given for packing in a previously dried cavity. These experiments so far had been conducted with standard amalgam, which is itself a pretty rapid setter. I then reverted to my old experiments of five-and-twenty years ago, and ascertained the shrinkage of the masses by the specific gravity test, with an exceedingly delicate balance. Under this test, which has to be used with a number of precautions into which I need not enter here, in order to get accurate results, it was found that while standard amalgam does not shrink very badly, even when freshly mixed, the shrinkage is wholly absent in equal parts of old heated amalgam and freshly-mixed amalgam thoroughly incorporated together. It really seems, therefore, that by this method of using this amalgam perfectly satisfactory results are attainable, and I then proceeded to try it in difficult cavities in actual teeth, in which I got again perfectly good results. I then took another amalgam, namely, the flint edge, which under ordinary conditions does not give results quite so good as the standard, but was not so pleased with the results. It may be that the presence of some copper makes an amalgam re-heated more workable. My own belief is, that in order to get water-tightness in full degree it is quite essential that the setting should be rapid—more rapid, perhaps, than is wholly convenient.

To sum up the results:—(1) With the exception of palladium it was found impracticable to get absolute water-tightness by any methods of packing in vogue. (2) Perfect results can be obtained by making the mass of an osteoplastic, using the amalgam only as a protective agent, to keep the fluids of the mouth from having access to the plastic filling. (3) Advantage, short of perfect results, can be got by diminishing the amount of fresh amalgam with its shrinkage still to do, whether by embedding rings, lumps of hard amalgam, or other foreign bodies in the soft mass. (4) The larger the mass the worse the shrinkage; no large filling should, therefore, ever be composed of fresh amalgam alone. (5) Absolutely perfect results can very generally be got by using old standard amalgam heated and packed in small pieces, burnishing it well against the walls, but this is troublesome, and in some classes of cavity perhaps impracticable. (6) In a large number of cases equally perfect results may be got with a mixture of new amalgam with old that has been heated to its softening point, and a beautiful finish can at once be got upon the plugs.

Mr. MANSBRIDGE asked if Mr. Tomes attached any importance to mixing amalgam with the hand, as affecting the ultimate result. Also whether it was better to squeeze out any excess of mercury before filling or to only just use the amount of amalgam required.

Mr. W. COFFIN asked if the author of the paper was able to say what really happened when an old hard amalgam was melted by heat. The idea suggested itself that the so-called decomposition by heat was really a resolution into a new series of definite chemical com-

pounds, which either combined or re-dissolved and crystallised with great rapidity. He had made some investigations, but they led to very puzzling and inconclusive results. The great difficulty was in getting always the same physical results in mixing amalgam, even using the greatest care and accuracy.

Mr. W. HERN inquired whether the ratio of the surface of a cavity to its depth made any difference in the contraction of the amalgam. It appeared that in a shallow filling over a large area the edge of the cavity had not been so good after a lapse of time as a filling which had been put in with a considerable depth and a small area.

Mr. BEADNELL GILL remarked that he had noticed on some occasions, when tempted in a hurry to rub the amalgam in his hand, that sometimes it yielded very good results, while at other times the results were exactly opposite. He put it down to the fact of the hand having some moisture which was conveyed to the dry amalgam, and so produced the failure. By avoiding that practice he had of late years considerably reduced the apparent failures.

Mr. E. LLOYD WILLIAMS, after referring to two experiments he had made with amalgam used as recommended by Mr. Tomes, said that for flush filling, which could easily be kept dry, the method described might be very useful, but he was not so hopeful as Mr. Tomes that contouring was to be done quite so easily. In cavities difficult to keep dry, and in inaccessible positions, it would be very difficult to pack the amalgam carefully, even with the aid of a matrix.

Mr. ROBBINS said that Mr. Tomes's experiments showed that large masses of amalgam must always shrink when put in as they were now doing. In that case would not it be better not only to have a lining, but to fill three-fourths of the cavity with an oxy-phosphate or the combination method. For the last three years he had made it a practice when putting in an amalgam filling to fill the last third of the cavity with amalgam as dry as possible, building it a little in excess, burnishing down hard and then using a Wolrab gold cylinder to exhaust all the surface mercury possible. After a second burnishing and use of the cylinder the result attained was very satisfactory. He asked if Mr. Tomes had used that method.

Mr. W. B. PATERSON advocated the practice of lining cavities with osteo, of the consistency of cream, and upon that plugging with rather moist amalgam, taking great care that the superfluous mixture which oozed from the sides of the cavity was removed; the amalgam being burnished in to the edges and finished by wiping off the superfluous mercury and amalgam. With regard to the use of old amalgam, he remembered an old practitioner invariably used up old amalgam fillings mixed sometimes with a little new, believing it to be a much better filling, with less shrinkage.

Mr. C. S. TOMES replied to the various questions asked, and the meeting adjourned.

THE usual monthly meeting of the Society was held on the 4th inst., Mr. FREDERICK CANTON, President, in the chair.

The minutes of the previous meeting having been read and confirmed, the following gentlemen were nominated for membership :— Messrs. Francis Mark Farmer, L.D.S.Eng., 17, Great Marlborough Street, W. ; Harry Symes Prideaux, L.D.S.Eng., 41, Wimpole Street, W. ; F. G. Frankland Rooke, L.D.S.Eng., 42, Kensington Gardens Square, W. (resident) ; J. Main Nicol, L.R.C.P., M.R.C.S., L.D.S. Eng., 2, Clarendon Road, Leeds ; George Arthur Peake, L.R.C.P., M.R.C.S., L.D.S., Alma House, Cheltenham ; Frank C. Porter, L.R.C.P., M.R.C.S., L.D.S., 12, Oxford Street, Nottingham ; George Nash Skipp, L.D.S.Eng., Sale, Cheshire (non-resident).

The following gentlemen were balloted for and duly elected members :—Messrs. Ernest H. A. Mackley, L.D.S.Eng., 74, St. Giles Street, Norwich ; Thomas Llewellyn Nash, L.D.S.Edin., 39, Church Street, Inverness ; William Simms, L.D.S.Ire., 2, Bury New Road, Manchester (non-resident).

The CURATOR (Mr. Storer Bennett) reported the presentation to the museum of various specimens. One was a lower lateral incisor, taken from a boy aged 14. The pulp cavity being largely exposed, the boy was in the habit of using a match, cut down to a point, to clear out food. On one occasion the match broke in the tooth, and its thin end worked down the root canal, ultimately appearing through the apex and producing alveolar abscess. The tooth was extracted at the hospital, and showed the match projecting about an eighth of an inch.

Mr. Larkin, of Melbourne, who had previously sent very valuable donations to the museum, had, at Mr. Bennett's suggestion, forwarded a male dugong skull, showing the tusks in perfect condition. The museum had hitherto only possessed a female dugong skull.

Mr. Charters White had presented a model showing the apex of a canine erupting in the palate. The patient, a lady aged 55, had worn a plate a long time, but eventually a pimple formed in the palate and the apex erupted. An accompanying photo-micrograph of a section about half-way down the root showed a very large amount of cementum and a very small pulp canal.

Mr. W. E. HARDY referred to the treatment of root canals, which, being small and indistinct, and in difficult positions, could not be thoroughly cleared. He had been in the habit of using a 10 per cent. solution of bi-chloride of mercury in absolute alcohol with very successful results. At the Dental Congress at Chicago, in 1893, Professor Miller recommended the use in such cases of a pellet composed of one-tenth of a grain each of bi-chloride of mercury and thymol. Mr. Harding had adopted this plan, using rather smaller pellets, one-fifteenth of a grain, and out of 200 cases by far the larger number had been very successful. The treatment was very valuable in cases where,

from the position, the shape or size of the canal, it was almost impossible to get at and fill in the ordinary way.

Mr. GARTLEY presented a molar tooth with a twisted fang.

Dr. J. E. GREVERS (Amsterdam) gave an interesting communication on "Hypoplastic Teeth" (teeth of defective enamel). After discussing the various terms used by writers on the subject, he stated that he had adopted the following classification:—(1) Hypoplasia cupuliformis; (2) Hypoplasia cuspidiformis; (3) Hypoplasia sulciformis; (4) Hypoplasia semilunaris (Hutchinsonian teeth). In referring to the microscopical appearances of the first three classes, he mentioned that they all showed a distinct line running from the outer surface of the defective enamel to the periphery of the dentine, the course being identical or parallel to the brown striæ of Retzius. By means of numerous lantern slides he demonstrated this point, as well as many other interesting details in connection with these teeth.

Mr. MUMMERY read a paper on photomicrography:—

Mr. PRESIDENT AND GENTLEMEN,—The communication which I bring before you this evening can perhaps hardly be called a paper, but may be better described as some practical hints on photographing with high powers of the microscope. Photomicrography, as it is not too euphoniously called, is a science (for such we may now term it) of quite recent development, but it has already been of immense value in many departments of scientific study. There can be no doubt of the educational value of the photomicrograph, and no course of lectures is now considered complete that is not illustrated by lantern slides. Photographs are of great value as a check upon observation; they keep drawings within bounds, and do not admit of quite such a play of the imagination as was frequently seen before the days when the camera was called in to assist the microscope.

While, however, fully recognising the value of the photograph in demonstrating minute structures, I do not think it is able to entirely replace the coloured drawing, but as a check upon it, it is invaluable, and it is highly desirable that all papers on histological research should be illustrated by both photographs and drawings. There is one point in this connection on which I would lay great stress, and that is that the photograph should not be touched up in any way, either upon the negative or the print. As soon as this is done a suspicion is thrown upon its accuracy, and its value as a check upon observation is completely done away with. Many collateral branches of knowledge bear upon the subject we are discussing to-night. The great and rapid advances in the science of bacteriology made during the last ten years have greatly stimulated photomicrography, as the minute organisms with which this new science is concerned are represented by photography with an accuracy and clearness not otherwise obtainable.

Another important discovery, that of isochromatic or orthochro-

matic plates, has been an excellent aid to the photomicrographer. These plates give the correct colour relations of the object in light and shade, and a moment's reflection will enable anyone to see the great value of this in photographing stained preparations. For instance, while formerly a yellow, from its weak effect upon the photographic film, came out black, or nearly so, a properly prepared orthochromatic plate (with the addition of a coloured light screen) renders it light in the resulting print, *i.e.*, in its proper shade relations to the other colours of the spectrum. Blue, again, which to the eye appears to be a dark colour, is rendered as white upon the ordinary photographic plate (blue containing a very large proportion of the chemical rays of the spectrum); a colour-corrected plate reproduces the blue parts of the objects as dark in the resulting print.

Another very important factor concerned in the present recent advances in the art is the introduction of the new lenses; first, the water and oil immersion lenses, and more recently the apochromatic lenses of Zeiss; both these improvements greatly increase the light admitted to the object. As I have described elsewhere, and perhaps may be permitted to repeat here, "the greatest stride in microscopic optics dates from 1886, when the firm of Zeiss, of Jena, introduced the so-called apochromatic lenses. Before the introduction of these lenses, a sharp image in any optical system could only be obtained with one portion of the spectrum, the other portions giving images not absolutely clear, but all more or less blurred. The apochromatic lenses give an image almost equally sharp with all the colours of the spectrum. In the old achromatic objectives the colour correction was only made for one portion of the area of the lens, so that towards the margins, and also at the centre, it was imperfect, but in the apochromatic lenses the colour correction is made equal for all portions of the area of the lens. Again, whereas in the older objectives only two colours of the spectrum were brought to one point, in the apochromatic system these colours are brought to one point. A special kind of glass in combination with fluorspar is employed in these lenses. The effect of these corrections is practically to abolish colour in the microscopic image; we obtain an increased concentration of light and a greater range of magnifying power with the same objective, as very high eye-pieces can be used with them without detriment to the image. Special eye-pieces are used with those lenses called compensating oculars, and their use is rendered necessary by the fact that all lenses of high aperture, owing to their hemispherical fronts, magnify the blue more than the red; an eye-piece is accordingly used in which the opposite error is introduced, the red being magnified more than the blue, and consequently with these eye-pieces the image is free from colour up to the margin of the field."

There are many excellent workers in this art, both in our own country and abroad; among the most prominent of the pioneers in

this field are Dr. R. L. Maddox, to whom we are indebted for the invaluable suggestion of gelatine as a base for the photographic film ; Dr. Woodward, in America, who produced beautiful results before the introduction of the new lenses ; Dr. Neuhauss, in Germany, whose photographs of flagellated organisms are well known ; and in our own country Mr. Andrew Pringle, whose beautiful work with high powers is familiar to us all ; his photographs of dental caries we have all admired on this screen. The work in this department, of our friend and former President, Mr. Charters White, is also well known to us, and his excellent photographs of dental and other tissues.

In taking photographs with low powers of the microscope, no great difficulty comes in, provided the specimens chosen are suitable for the purpose, but the photography of objects such as bacteria, with high powers, is a matter requiring great patience and perseverance, and it is in obtaining good results with a magnifying power of 1000 and over that the utmost refinements of the art are called into play. An expensive and elaborate apparatus is not necessary in order to obtain good results. There is no doubt, however, that a special apparatus has many advantages ; such a one as I have here to-night, although not nearly so elaborate as many that are now made, enables one to do the work with a minimum of fatigue, and ensures rigidity, which is a very important point. The first desideratum is of course a very firm and solid base-board, not supported on legs attached to it, but on a very firm and solid table, and for high-power work, wherever possible, on a cemented basement floor, for vibration is the great bugbear of the photographer. The bellows should be capable of considerable extension, and blackened cardboard diaphragms inserted at intervals to cut off all reflected rays ; a small amount of reflection from the interior of the bellows or of the microscope tube will give rise to ghosts in the negative—an unpleasant kind of phantom which generally manages to blur the one important part of the negative.

To prevent these ghostly reflections, a careful examination of the interior of the camera should be made every now and then, and the slightest reflecting surface should be touched with a dead black paint. The microscope tube should be lined with black velvet. Any microscope will serve our purpose that is rigid in the horizontal position, and nose pieces should not be used to carry the lenses, but they should be screwed directly into the microscope body to ensure accurate centering.

A good sub-stage condenser is a very important part of the apparatus, and the high angle achromatic Abbé condenser of Zeiss is one of the best to employ, as it transmits a very large cone of achromatic light. It should be furnished with an iris diaphragm. If an oil lamp is employed as the radiant, a bull's-eye or similar condenser should be placed immediately in front of the flame, so arranged as to convey parallel rays to the back of the sub-stage condenser. I prefer

a large flat wick lamp, with the edge of the flame towards the object, not having had much success with the round wick employed by Dr. Neuhauss.

A means of using the fine adjustment while focussing at a distance is of course requisite. In the apparatus here shown this is obtained by a brass rod covered at one part with india-rubber; this bears upon a friction wheel, and by means of a cord and pulleys, works the fine adjustment. There are, of course, many modifications of this focussing apparatus. The portion of the apparatus on which the microscope and lamp are placed is pivoted, so that it can be rotated and the adjustments made while the operator is in a sitting position, before it is returned to its place in front of the camera.

For use with the orthochromatic plates coloured glass screens are required—yellow glass of different shades being the most generally useful; a colour called signal green is valuable in photographing certain shades of red.* Many prefer to use fluid light filters instead of glass. A solution of picric acid forms an excellent pale yellow filter, and different strengths of a solution of bichromate of potash are useful when darker tints are required. If sunlight or the lime or electric lights are employed, Zetnow's light filter is most valuable. It consists of dry nitrate of copper $2\frac{1}{2}$ ounces, dry chromic acid 2 drachms, water $4\frac{1}{2}$ ounces. If the lime light is employed, of course the exposure time is very much shortened, but the eyes must be protected in focussing with dark spectacles or a deep coloured glass placed below the stage.

I think perhaps our purpose will now be better served if I describe the steps to be taken in making the adjustments and exposure for photographing an ordinary object—first, supposing we are using a low power such as an inch or half inch, and secondly, with a high power such as a one-twelfth oil immersion at such an extension as to give a magnifying power of 1,000 diameters.

We will suppose we have chosen a good thin and even section of dentine or enamel, unstained. The first thing to do is to sit down to the turn-table, and having placed the eye-piece in the tube of the microscope, accurately adjust the centre of the flame to the centre of the field of the lens, using the flat surface of the flame; then place the object on the stage and carefully choose the best part of it, seeing that the lighting is fairly even. Removing the eye-piece we return the turn-table to its place, allowing the tube of the microscope to pass within the brass flange on the camera without touching it. A focussing screen carrying a piece of white cardboard is now placed in the camera—the little door at the side is opened, and again sitting down

* If the glass is placed well behind the microscope it need not be worked glass, but if placed within or near the sub-stage, it must be optically worked; the two surfaces must be quite parallel.

by the microscope, the projected image is focussed with the coarse adjustment on the cardboard. We now judge if the field on the paper is evenly lighted, and probably find it advisable to adjust the bull's-eye condenser near the flame so as to diffuse the light evenly over the object and its projected image.

This method of preliminary rough focussing saves a great deal of unnecessary fatigue in focussing through the screen at the back of the camera, but once having obtained the focus on the card, we close the side door and put a plate-glass screen in its place; a very little adjustment with the focussing rod and fine adjustment with a focussing lens will give the true focus of the object.

Removing the screen we substitute the filled dark slide, and after closing the shutter of the camera, pull out the slide and all is ready for exposure. Being sure that the apparatus is free from vibration we open the shutter and give the exposure—such an object as this with a good light would require perhaps from ten to fifteen seconds.

If, however, we wish to photograph a slide of bacteria and magnify it a thousand times, we shall have to take further precautions, and as such a preparation will have been stained with an aniline dye, colour difficulties will have to be met. To obtain a negative magnified to this extent, a one-twelfth oil immersion lens, preferably an apochromatic lens of high angle, should be used in combination with a special projection eye-piece, although of course, by greater extension of the camera, an eye-piece can be dispensed with.

Place the substage condenser in position, and with a half-inch lens focus down upon the condenser until the little hole in the centre of the cap is exactly in the middle of the field of the lens, then carefully centre the aerial image of the *edge* of the flame which is projected by the lenses of the condenser. Replace the half-inch by the one-twelfth and again see that condenser and flame are properly centred, as although it is much easier to make these adjustments with the lower power the optical centre of the immersion lens may not quite correspond with it. In photographing a coloured preparation such as this, almost the full aperture of the condenser should be used—that is, the iris diaphragm should be nearly open to its full extent.

Another point is that the angle of aperture of the condenser should be equal to that of the objective if we wish to take full advantage of the latter.

The condenser and light being now centred, place the object upon the stage and focus down upon it. This being a coloured object we shall have to employ a coloured screen, and if the stain is methyl violet or gentian violet a pale yellow screen will suit it best. The turn-table is now adjusted, the paper screen placed in position and viewed through the door—a rough re-adjustment of the focus with the coarse adjustment will be found necessary, and it must be seen that the edges of the disc are quite sharp; if not, the screw collar on

the eye-piece must be shifted and an increased and even illumination obtained by means of the bull's eye as before.

In focussing with the fine adjustment, the glass screen may now be dispensed with, and the focussing glass, which may be either a Ramsden eye-piece or a spectacle lens of 8-inch focus as recommended by Mr. Bousfield, used upon the aerial image in the camera. With a long extension of the camera, the rays which form the image being nearly parallel, there is a considerable range in which the focus is quite sharp, and consequently we can dispense with the glass screen. This is often very convenient, as one's eye is not disturbed by any markings upon the surface of the glass.

If using a short extension, however, the rays being more divergent, the region of sharp focus is much more limited in extent, and it is necessary to use the glass screen in order to insure that the sharpest focus of the object shall be exactly in the plane of the sensitive plate. We now close the shutter, examine again to make sure the focus has not altered, and very carefully insert the loaded back—open the shutter and expose. In this instance the exposure would be about six minutes, but the time must, of course, depend very much upon the nature of the slide and the depth of tint of the coloured screen.

Developing a plate taken with a high power requires considerable experience and judgment. I have tried a great many developers, as hydrokinone, eikonogen, rodinal and metol, but, like many others, I find I get the best results with pyrogalllic acid and soda, and more control of the development, adding fresh soda by degrees as the image appears, and always using a small quantity of a 10 per cent. solution of bromide in the developer. If the negative is found to be clear, but under-developed—as is very often the case, it being particularly difficult to judge the density of a photomicrograph before clearing—it may be intensified, and I have obtained excellent results with the ordinary mercury and ammonia intensifier, being very careful to remove all traces of hyposulphite before placing in the sublimate solution and washing very thoroughly before applying the ammonia. If the negative is a little veiled, it is better not to try to intensify, but one can often procure a very satisfactory lantern slide from such a negative by a contact print with a weak light.

There are many excellent makes of lantern plates, those I have used lately being the special Ilford and the Imperial plates, developing with hydrokinone, to which is added a few drops of bromide. To obtain a perfectly clear background, which greatly adds to the beauty of the slide, I pour on and off two or three times a solution of hydrochloric acid in water (about one part to eight) and then thoroughly wash. For printing I prefer any of the gelatino-chloride papers, as they give excellent detail, glazing the surface by squeezing on to highly polished ferrotype plates.

The PRESIDENT asked whether Mr. Mummery had seen an apparatus

exhibited at the Royal Institute, with a tube at the side reflecting the image. The object was that in photographing moving specimens they could watch, bulb in hand, for the instant when the image was in the middle of the screen.

Mr. CHARTERS WHITE said Mr. Mummery's paper was so lucid and full of truth that he should recommend all his colleagues to study it. He could endorse a great many of its statements from practical experience. He thought a great mistake was made in having the object so flooded with light that nothing could be seen but a glare. If the light was softened the details would come out better. A pale yellow screen was very useful to get contrasts, but he had not been so successful with the signal green, which lengthened the exposure without any apparent benefit. He was very pleased with the exhibition of Mr. Mummery's slides on the screen. He himself had never worked up to a thousand diameters, it was beyond his power. The vibrations occurring in towns from the passage of heavy vans and so on were very antagonistic to photomicrography, and he envied those men who had concrete floors and could live out in the country.

Mr. ROUGHTON, referring to the expense incurred in pursuing photomicrography, advised gentlemen going into it to make up their minds at first start to do it properly, or else to leave it alone. For his own part he thought the value of apochromatic lenses was rather over estimated, and that most work could be done as well with the ordinary achromatic lens; with regard to illumination he always used the lime light, the exposure required being much shorter than with the oil lamp. He agreed with Mr. White as to cutting down the light; the more faintly stained the object, the less the illumination required. By cutting down the condenser and giving longer exposure, much better results were obtained than by shorter exposure with a bright light.

Mr. MUMMERY briefly replied to the various points raised.

Mr. Stocken was unanimously elected an honorary member.

The thanks of the Society were voted to the donor to the museum and the reader of the paper and the meeting adjourned.

THE DINNER.

A MOST successful dinner was given by this Society on Saturday, February 2, the chairman of the evening being the PRESIDENT (Mr. F. Canton).

Although founded as long ago as 1856, the Odontological Society have never before met together at dinner, and it is to be hoped that although in many respects the present one was experimental, the success which attended it may perhaps tempt the Society to make the dinner, if not an annual, at any rate a bi-annual, affair. The rendezvous

was the Hotel Métropole, Whitehall Salon, the company present numbering about 120, the visitors including Sir William H. Flower, K.C.B., F.R.S., Drs. Pavy, F.R.S., Nix, Coleman, Shaw (Dean of Guy's Hospital), Breward Neale, and Mr. Bowreman Jessett.

During the evening an excellent selection of music was given under the direction of Mr. John Butterfield, and included songs by Messrs. Hardwicke and Barry Linden, an extremely clever musical sketch by Mr. Dudley Causton, and a selection of music by the Stavordale Quartette. The toast list included, in addition to the usual loyal toasts, that of the "Odontological Society of Great Britain," which was proposed by Sir William H. Flower and responded to by Mr. J. Smith Turner; "The Scientific Societies," proposed by Mr. C. S. Tomes, replied to by Dr. Pavy; "The Visitors," proposed and replied to by Mr. S. J. Hutchinson and Mr. Bowreman Jessett respectively, while the health of the Chairman was proposed by Mr. David Hepburn in a charming speech.

Brighton Dental Hospital.

THE Annual General Meeting of Governors and subscribers of the Brighton, Hove, and Preston Dental Hospital was held on January 30, in the Board Room, 116, Queen's Road, Brighton, under the chairmanship of Alderman Dr. Ewart, J.P. There were also present Dr. Octavius A. Fox, Dr. W. Harrison, Mr. W. J. Stephens, Mr. D. E. Caush, Mr. J. Wood, and Mr. J. F. Rymer.

Mr. POTTER read the Annual Report:

The Committee, *inter alia*, expressed regret that the financial position was not more satisfactory, and that new subscribers were not more readily gained. Notwithstanding their claims to support, however, and in spite of the handsome donations from the Committees of the Hospital Saturday and Hospital Sunday Funds, the debt upon the institution had been doubled, the deficiency of £8 14s. 10d. having risen to £16 19s. 10d., and that notwithstanding that the greatest economy and care had been practised. The total expenditure had been but £140, and of that amount £70, or one-half, was absorbed by rent, rates, and taxes, over £25 being expended in the necessary work of the institution, such as in the purchase of anæsthetics, repairs, firing, printing, &c. Allusion was made to the small number of donations received from workmen's boxes, seeing that 50 per cent. of the patients were either workmen or members of their families.

The CHAIRMAN moved the adoption of the Report and financial statement; Dr. FOX seconded, and the report was adopted.

In moving that Dr. Ewart be re-elected President for the ensuing year, Mr. W. J. STEPHENS said they all recognised the great obligation which the hospital was under to Dr. Ewart, and he did not know

where they could look for a better President. The motion was carried unanimously.

On the motion of Mr. J. F. RYMER, Mr. T. Billing, Dr. Octavius Fox, Colonel H. Tester, and Mr. Marriage Wallis were re-elected Vice-Presidents for the ensuing year ; and the following gentlemen were appointed as the Committee :—Mr. E. A. T. Breed, Mr. W. Carter, Dr. Walter Harrison, Mr. A. O. Jennings, Mr. F. Sundius Smith, Dr. C. Berrington Storer, Mr. D. Thomas, Mr. A. Upton, and Mr. Isaac Wells.

Mr. W. HARRISON moved a hearty vote of thanks to the hon. medical staff for their valuable services during the past year ; and, this having been agreed to, Mr. STEPHENS proposed a vote of thanks to the Chairman, Mr. WOOD seconding.

The motion was carried ; and a vote of thanks to the President for presiding at the meeting ended the proceedings.

Liverpool Dental Hospital.

ANNUAL MEETING.

THE Annual Meeting of the subscribers to this institution was held in the Town Hall under the chairmanship of the Right Hon. the Lord Mayor, on Thursday, January 31.

Mr. W. L. JACKSON, the hon. secretary, read the thirty-fourth yearly report, from which it appeared that the total number of patients admitted since the formation of the hospital amounted to 337,106. During the past year the number of patients treated at the hospital had been 20,651, and of operations 28,737. The total cost of the alterations and extensions effected had amounted to £1,250, a portion of which had been met by special donations, but there remained a balance of £885 17s. 11d. to be provided for, and the committee appealed to the friends of the hospital and the public generally for help in meeting this liability, which they hoped, in the interests of the institution, they might be enabled to discharge during the current year. There was also a balance of £55 2s. 5d. due to the hon. treasurer on current account, and an increase in the subscription list was absolutely necessary.

The LORD MAYOR moved the adoption of the report and balance-sheet, Sir JAMES POOLE seconding the resolution.

On the proposition of Mr. GAIR, seconded by Dr. WAITE, thanks were voted to the president, the chairman of committee, and the officers for their services. Dr. WAITE, in the course of his remarks, referred to the assistance which the hospital rendered to the girls in shops and restaurants.

On the motion of Mr. E. H. COOKSON, seconded by Mr. G. WYNNE,

a vote of thanks was accorded to the consulting physician, the consulting surgeon, and the dental staff.

The president, officers, and committee were re-elected.

Mr. QUINBY moved, and Mr. THOMAS M'CRACKEN seconded, a vote of thanks to the Lord Mayor for presiding.

The LORD MAYOR briefly replied.

Dental Hospital of Edinburgh.

THE Annual Meeting of the Incorporated Edinburgh Dental Hospital and School was held January 25, at 31, Chambers Street, Mr. W. Bowman Macleod, Dean, in the chair.

The SECRETARY (Mr. G. M. Stuart, W.S.), read the report by the Directors, which, after referring to the removal of the hospital and school to the new premises (an account of which was recently published), gave the following statistics of work done during the year 1894:—The number of operations performed in the hospital was 17,095, against 11,795 in the previous year; the number of teeth preserved by filling was 5,011—gold fillings being used in 467 cases—and exceeding the previous year's record by 711. Dental appliances were supplied in 100 cases. The Treasurer's accounts, which had been audited by Mr. Robert Marr, C.A., showed that special contributions to the amount of £395 19s. 3d. had been received during the year, including the sum of £200 received from the Town Council of Edinburgh out of the Residue Grant, for the special purpose of supplying apparatus for technical education to the students attending the school, and a sum of £91 6s. 7d., being the net proceeds of a concert given by Mr. Waddel's School of Music. The ordinary income amounted to £854 5s. 7d. The expenditure amounted to £2,604 7s., including £1,877 9s. 6d. paid for the alterations, and £280 9s. 2d. for apparatus and furnishings. The Directors, in addition to the bond of £2,500 over 31, Chambers Street, have incurred a debt of £750, while accounts for alterations and furnishings not yet paid will amount to another £350. They have recently issued an appeal to the public for contributions to enable them to clear off this debt. The Directors' and Treasurer's reports were approved.

Dr. John Smith, F.R.C.S.E., Bailie Kinloch Anderson, and Mr. W. Campbell, L.D.S., who retired by rotation, were re-elected Directors, and Mr. Marr was re-elected auditor. A vote of thanks to the Chairman terminated the proceedings.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Human Actinomycosis.

BY PROF. A. PONCET.

A LITTLE over two years ago I reported to the Academy the first case of human actinomycosis observed at Lyons.

Last year, in his thesis on actinomycosis in France, with special reference to the region about Lyons, one of my pupils, Dr. J. Jirou, published four cases of actinomycosis, two of which were observed by Drs. A. Pollosson and Rochet, at the Hôtel-Dieu.

I have since had under observation six additional cases in which the diagnosis was corroborated either by histological examination, or by cultures made by the director of my laboratory, Dr. Dor. These six cases are as follows :—(1) a case of thoraco-pulmonary actinomycosis sent me by my colleague, Prof. Lépine, with fatal issue ; (2) a case of actinomycosis of the left superior maxilla, with complete disappearance of this bone as in gummatous syphiloma, and propagation to the base of the skull, followed by death ; (3) a case of laryngeal actinomycosis with deep-seated, extensive cervical abscess, of a very grave nature, the patient being also likely to die ; (4) three cases of facial, temporo-maxillary actinomycosis, constituting the most common type of the disease.

Passing over the details of these six cases, we are confronted with a question of general interest, viz., whether actinomycosis is as rare in France as it is alleged to be. Taking into account the statistics published in various countries and the nine cases observed at Lyons in barely two years' time, of which seven occurred in my wards alone, it seems to me that actinomycosis is, at any rate, of as frequent occurrence in France, as in Italy, Switzerland, Denmark, Holland, &c., while apparently less frequent than in Brandenburg and South Germany.

Lyons is certainly not the only place where the disease occurs, seeing that the nine patients suffering from actinomycosis came from various places, viz. : Ain, 2 ; Loire, 2 ; Rhône, 3 ; Savoy, 1 ; Paris, 1 (Poncet, Jaboulay, Vallas, A. Pollosson, Rochet).

In eight of these nine cases of actinomycosis, the oldest of which dates from two years ago, the treatment was both medical and surgical, consisting of incision, drainage, curetting of the abscesses, &c., and internal administration of iodide of potassium in large doses. The patient whose case I reported to the Academy two years ago, although suffering from a grave form of the disease, recovered without being treated by iodide ; two patients died ; one more will probably die before long ; two cases of facial actinomycosis are still under treatment.

Incidentally I call to mind that the actinomycosis was described for the first time in France by Laboulbène in 1853, and by Lebert in 1857.

Considering the unquestionable benefits derived from the use of iodide of potassium in certain cases of actinomycosis, it is probable that many patients suspected of being syphilitic, and cured by the administration of this drug, were really actinomycotic.

Lastly, it is not improbable that the frequency of actinomycosis attacking the angle of the vertical ramus of the inferior maxilla, with diffuse infiltration of this region, trismus, abscesses, &c., has more than once led to blaming a wisdom-tooth for the mischief, although it had nothing whatever to do with these more or less grave manifestations.

In our nine patients suppuration occurred after a longer or shorter period of time had elapsed, and fistulæ were formed either by spontaneous opening or incision of the abscesses.

The lesions, although apparently of an inflammatory nature, curiously enough, at the same time presented certain features recalling a neoplasm.

On the other hand, in cases in which suppuration did not appear until a late period, there were suggestions of a malignant tumour.

A diagnostic sign, to which I desire particularly to draw attention, is the persistence, in some cases, of extremely sharp pain, which is explained by compression of the affected tissues, presenting a lardaceous, almost ligneous consistency, while the course of the disease and the objective characters preclude any idea of acute inflammation.

Adding these new cases of mine to those collected by Drs. Guermontprez and Bécue, we have a total of twenty-two cases of actinomycosis so far observed in France.—*The Medical Week.*

Some Statistics showing the Relative Loss from all Causes of the different Permanent Teeth.

By J. W. PARE & HERBERT WALLIS.

At the suggestion of Mr. Maggs, and through the kindness of the Medical Superintendent (Dr. Perry), an analysis of the Registers of the Extraction of Teeth in the Dental Department of Guy's Hospital has been made. The record extends over a long period, and the total number of permanent teeth extracted was 30,012.

TABLE I.

TEETH.	NUMBER.	PERCENTAGE OF THE WHOLE NO.
1st Molars	10891	or 36'30
2nd Molars	5904	" 19'68
2nd Bicuspids	4179	" 13'93
1st Bicuspids	3212	" 10'70
3rd Molars	2639	" 8'76
Lat. Incisors	1202	" 4'00
Canines	1098	" 3'66
Central Incisors	887	" 2'95
Total	30,012	Total 99'98

TABLE II.

Showing the percentage of the different kinds of the Upper Teeth extracted.

TEETH.	NUMBER.	PERCENTAGE OF UPPER TEETH.
1st Molars	5259	or 32'04
2nd Bicuspid	2503	" 15'24
2nd Molars	2415	" 14'22
1st Bicuspid	2288	" 13'87
3rd Molars	1317	" 7'96
Lateral Incisors	1013	" 6'17
Canines	861	" 5'24
Central Incisors	754	" 4'10
	<hr/> Total 16,410	<hr/> Total 99'84

TABLE III.

Showing the percentage of the different kinds of the Lower Teeth extracted.

TEETH.	NUMBER.	PERCENTAGE OF LOWER TEETH.
1st Molars	5632	or 41'40
2nd Molars	3489	" 25'63
2nd Bicuspid	1676	" 12'32
3rd Molars	1322	" 9'71
1st Bicuspid	924	" 6'78
Canines	237	" 1'74
Lateral Incisors	189	" 1'38
Central... ..	133	" '97
	<hr/> Total 13,602	<hr/> Total 99'93

TABLE IV.

In order of frequency of Upper and Lower Teeth combined.

TEETH.	NUMBER.	PERCENTAGE OF TOTAL NUMBER EXTRACTED.
Lower 1st Molars	5632	or 18'765
Upper 1st Molars	5259	" 17'409
Lower 2nd Molars	3489	" 11'625
Upper 2nd Bicuspid	2503	" 8'330
Upper 2nd Molars	2415	" 8'046
Upper 1st Bicuspid	2288	" 7'623
Lower 2nd Bicuspid	1676	" 5'584
Lower 3rd Molars	1322	" 4'404
Upper 3rd Molars	1317	" 4'388
Upper Lateral Incisors	1013	" 3'375
Lower 1st Bicuspid	924	" 3'078
Upper Canines	861	" 2'868
Upper Central Incisors	754	" 2'512
Lower Canines... ..	237	" '789
Lower Lateral Incisors	189	" '629
Lower Central Incisors	133	" '443
Total	30,012	Total 99'868

It is interesting to find that the published statistics by Sir John Tomes, as shown by the subjoined table, indicate the same relative frequency of the loss of the permanent teeth as at Guy's Hospital, although the total of Tomes' is 3,000, as compared with our 30,012.

TABLE V.

Compared with Sir John Tomes' statistics.

SIR JOHN TOMES.		PARE & WALLIS (deduced to 3001'2).	
1st Molars...	1124 or 37'4600	1089'1	or 36'3000
2nd Molars ...	637 " 21'23	590'4	" 19'68
2nd Bicuspid ...	434 " 14'46	417'9	" 13'90
1st Bicuspid ...	273 " 9'10	321'2	" 10'70
3rd Molars ...	265 " 8'83	263'9	" 8'79
Lateral Incisors ...	117 " 3'90	120'2	" 4'00
Canines ...	78 " 2'60	109'8	" 3'50
Central Incisors ...	72 " 2'40	88'7	" 2'95
Total	3000 99'98	Total	3001'2 99'82

The practical outcome of the study of these statistics is to impress upon the minds of dental students and practitioners that the first molars are those most liable to be lost early, and that their extraction in crowded mouths for regulation purposes is to be preferred, *ceteris paribus*.

It shows also that the second bicuspid is more liable to be lost early than the first, and hence the removal of the former is indicated. Again, the extremely low percentage of extraction of the lower incisor and canine teeth is manifest. The persistence of these teeth is well known to all engaged in the practice of dentistry, and is, no doubt, accounted for, to a large extent, by the fact that they are continuously bathed in saliva, which, being normally alkaline, neutralises any acid produced by fermentation of food lodged between the teeth, or eructations from the stomach, and so prevents the disintegration of the enamel.—*Guy's Hospital Gazette*.

An Artificial Ear.*

By H. N. GROVE, L.D.S.

A MAN 63 years of age was admitted into the Queen's Hospital, Birmingham, in April, 1893, with an epithelioma of the left auricle. The greater part of the auricle was removed by Mr. F. Marsh.



* The blocks illustrating this paper have been kindly lent by the proprietors of the *Lancet*.

A plaster-of-Paris cast was taken of the side of the head. An artificial ear was built up in wax to match the healthy one on the right side, and was then made in vulcanite and aluminium, tinted and



enamelled to harmonise with the complexion. No artificial contrivance (such as a spectacle frame) was made use of to support the artificial auricle; adhesion to the head became effected by means of a saturated solution of mastic in absolute alcohol. —*Lancet*.

Death from Chloroform given for a Dental Operation.

WE are indebted to the senior house surgeon for a careful account of a recent death under chloroform which took place at the Bristol Royal Infirmary on January 14. The patient, a woman aged 55, suffering from trismus caused by a carious wisdom tooth, sought for relief and was admitted into the infirmary. On the 14th she was given chloroform after careful examination of her chest. The emphysema of the apices and borders of the lungs and dilatation of the tricuspid orifice revealed by the necropsy were apparently not sufficient to give clinical evidence, as we are told there was nothing abnormal about the chest. Chloroform was the selected anæsthetic, as it was believed nitrous oxide gas or ether would not have overcome the muscular spasm (trismus). Skinner's mask was used. The struggling stage, although violent, was not prolonged, and during it the chloroform was given with due caution. Anæsthesia was induced in four

minutes, about three drachms of the anæsthetic having been used. At this time the corneal reflex was absent and the pupils were moderately contracted, the respiration and pulse being normal. The patient was then wheeled into the operating theatre, the transit occupying a few seconds. She was lifted on to the operating table, and respiration was then noticed to have ceased. At this moment slight cyanosis of the face was seen and the radial pulse was observed to be absent. The head and shoulders were pulled over the end of the table, the mouth opened, and the tongue pulled out with forceps, while artificial respiration was practised. The method of cardiac stimulation dependent upon rapid percussion over the heart area was also tried, and as these means failed electrical excitation of the heart was attempted, and finally acupuncture of that viscus was employed. The usual stimulants, nitrite of amyl and enemata, were also called into requisition, but no recovery took place. This unfortunate occurrence seems very difficult of explanation unless we regard it as a paralysis of the medullary centres through what was, not ordinarily speaking, an overdose of the chloroform. Moderately contracted pupils, with soft normal breathing, are hardly consonant with an excessive intake or a retarded output of chloroform.—*Lancet*.

MISCELLANEA.

THE BENEVOLENT FUND (AN APPEAL).—In another column we print a form of appeal, now being circulated to those members of the Association who are not yet subscribers to the Benevolent Fund. Knowing the energy and devotion displayed by the Executive, and being fully satisfied of the vast amount of good done by the Fund, we trust that the present circular will meet with a hearty and general response.

THE PRELIMINARY EXAMINATION.—The General Medical Council have now revised the list of Indian, Colonial, and Foreign Examinations which will be accepted in lieu of the Medical Preliminary, and have agreed that after Oct. 1, 1895, no certificate will be accepted by the Registrar unless it shows that the examination has been conducted by or under the authority of the body granting it, includes all the subjects required by the Council, and states that all have been passed at the same time.

A NEW MEDICAL PUBLICATION.—Medical literature has just been enriched by the addition of a fresh publication under the name of *Clinical Sketches*. The purpose of this journal is to supply an illustrated record of Medicine and

Surgery in such a manner that the practical bearing of new discoveries and interesting cases may be imparted in as brief and clear a manner as will be consistent with usefulness to the practitioner. The work, which is to be published monthly, has as an editor Mr. Noble Smith, whose work in connection with *An Atlas of Histology* is well known. The contents of the number before us include original papers, epitomised lectures and papers, therapeutics, new apparatus, nurses' column, reviews, &c., &c.

THE LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.—We understand that the series of Odontological Society's Transactions in this library is far from complete, the following volumes being still required to complete the series, namely, vols. 1, 2, 3, 5, 6, 22, 23, 24, 25. The gift of any of these volumes to the library of the British Medical Association would be gratefully acknowledged by the authorities.

PHOSPHORESCENCE AND LOW TEMPERATURES.—Professor Dewar has again added to his already valuable researches. His latest results go to show that certain substances which are not luminous, or only slightly so at ordinary temperatures, become distinctly luminous after cooling to 180° C. below freezing. At the lecture which he recently gave at the Royal Institution, this point was illustrated by a series of brilliant experiments, substances such as gelatine, ivory, rubber, cotton, linen, sponge, eggs, feathers, appearing quite bright at the low temperature—while by another series of experiments he showed that a large number of colourless salts, and of definite organic compounds, are brightly phosphorescent when brought to the temperature of boiling air. Low temperatures also retard photographic action, and although plates are still sensitive at that temperature, it is calculated that photographic action is reduced by about 80 per cent.

A CASE OF ANKYLOSIS OF THE JAW.—The *Lancet* (Feb. 2) contains the particulars of an interesting case of ankylosis of the jaw of long standing, which was successfully treated by operation. The patient was a man 39 years of age, who, in 1882, received a severe blow which damaged the zygoma and condyle of the lower jaw on the right side. Within two and a-half years the movement began to be restricted; this slowly

increased, and in two years' time the jaw was completely fixed. The operation consisted in an incision along the posterior border of the ascending ramus of the mandible on the right side, from half an inch below the zygoma to the angle of the jaw. This incision was taken down to the bone. With a raspatory the ascending ramus was cleaned, and about three-quarters of an inch above the angle a wedge-shaped piece of bone was removed with the base of the wedge (half an inch) posterior. The patient made an excellent recovery, being able to open the mouth to the extent of seven-eighths of an inch, and at the same time having a good lateral movement, a condition which was still present a year after the operation.

XEROSTOMIA.—At a recent meeting of the Clinical Society of Manchester, a case of xerostomia was exhibited. The patient in question was 30 years of age, and exhibited an enlargement of the parotid glands, and complete arrest of all the buccal and salivary glands. The condition commenced about four years previous to being seen, and was associated with anæmia. Dr. Harris, who showed the patient, considers that xerostomia is a functional nervous disorder, and he assigns a similar cause to the parotid enlargement.

A CASE OF LATE HEREDITARY SYPHILIS.—A patient 16 years of age, exhibiting signs of hereditary syphilis, was brought before the Society of Dermatology and Syphilography of Paris by Dr. Eudlitz. The lesion consisted in deep ulcerative lesions of the forehead, also nose and lips, and were preceded by necrosis of the nasal bones. These late manifestations of hereditary syphilis are, in the opinion of Dr. Eudlitz, but imperfectly known, the lesion when occurring being regarded frequently as tuberculous, and treated as such.

DEATH FROM COCAINE.—A recent issue of *Le Progrès Dentaire* contains a short announcement of a death which occurred in Madrid from cocaine. The subject was an officer in the army, and the injection, which was a large one, was given for producing anæsthesia during the extraction of a tooth. No other details of the case are published.

A LOCAL ANÆSTHETIC MIXTURE.—A mixture of ten parts of chloroform, fifteen parts of ether and one part of menthol,

used as a spray, is recommended by the *Medical Age* as an excellent and prompt means for obtaining local anæsthesia lasting for about five minutes.

OZONE AS A DISINFECTANT.—Ozone has recently been shown by Mailfert to be soluble in water to the extent of 39·4 mgm. per litre at 0° C., 25·9 at 15° C., 39·4 at 27° C., and ·6 at 5° C. He suggests, therefore, that this property of ozone may be utilised to sterilise water in certain circumstances, and that ozonised water may serve as an antiseptic and disinfectant in hospitals.

PARAFFIN ON OSTEOPLASTIC FILLINGS.—Dr. Darby, instead of paraffin, finds that resin and wax melted together and poured on to osteoplastic fillings give better results than paraffin, as the latter scales off as soon as wet. After a day or two the resin and wax take a polish almost like ivory.

A CURIOUS PROPERTY OF ALUMINIUM.—Margot, of the University of Geneva, has recently discovered a curious property possessed by aluminium. He finds that this metal when rubbed on glass, leaves behind most brilliant markings, which do not disappear after any amount of washing. This property, which is common also to silicious substances, is especially marked when the rubbed surface is covered with water, or simply aqueous vapour.

METHODS OF COATING ALUMINIUM WITH METALLIC FILMS.—The *Journal* of the Chemical Society gives the following two methods of covering aluminium with metallic films:—“Aluminium becomes covered with a hard film of copper on rubbing it with tin dipped in copper sulphate solution, the deposit increasing in thickness if the coated metal is suspended in a dilute copper salt solution. Aluminium is covered with tin by rubbing it with brass moistened with solutions of certain tin salts, such as ammonium stannichloride; in this case, too, the deposit increases in thickness when the metal is suspended in a tin salt solution of suitable concentration. It is added that aluminium which has been thus coated with copper, receives a coating of tin over the copper when suspended in a solution of tin salt.

EDINBURGH DENTAL STUDENTS' SOCIETY. — The third ordinary meeting of this Society was held on January 14, in the board-room of the hospital. Mr. J. T. Jameson, L.D.S., read a paper on "The Use of Gum Body in Crown Work," and Mr. H. B. Ezard, L.D.S., addressed the Society on a method of making an installation with the bichromate cell. Remarks were offered during the course of the evening by Messrs. Simmons, Ezard, Malcolm, Lindsay, Morris Stewart, Walkinshaw, and Finlay (a visitor), and questions were asked by Messrs. J. W. E. Stewart and Crichton. Thanks were tendered to Messrs. Ezard and Jameson, and these gentlemen each replied. Mr. Jameson showed several copper and silver wires of various sizes for use with a root canal drier; a rubber-dam holder, the advantage of which consisted in two elastic bands passing respectively above and below the ear; copper wires roughened by file for root canals, three points in their favour being that they are adaptable to roots, cheap, and easily cleaned by passing them through the flame of a spirit lamp. The fourth general meeting of the session was held on the evening of February 4, in the board-room of the hospital. Mr. Swales read a paper on "Methods of Treating and Filling Roots." He was followed by Messrs. Simmons, Wood, Morris Stewart, Shiach, J. W. E. Stewart, Lindsay, Mackenzie and Park, and Mr. Swales replied.

DENTAL HOSPITAL OF LONDON STUDENTS' CLUB.—The Annual Dinner of the Past and Present Members of the Dental Hospital of London Students' Club (late Athletic Club) will be held on Tuesday, March 5, at the Holborn Restaurant (King's Hall), at 6.30, David Hepburn, Esq., in the chair. All communications with reference to the dinner should be addressed to the Hon. Secretaries, W. F. Forsyth, Jun., and J. E. Humphreys, at the Dental Hospital, Leicester Square, W.C.

The dance given by this Club on Tuesday, Feb. 12, at the Portman Rooms, was in all respects a success, and the company, which numbered nearly 200, seemed one and all to thoroughly enjoy what was indeed a pleasant evening. Gatherings of this character tend to lock still tighter friendships formed whilst at Hospital, and the result of this, their

first dance, should encourage the Club to make the affair an annual fixture.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—The next meeting of this Society will be held on Monday, March 4, at 8 p.m., when a paper on "Some Experiments with Osteo-Plastic Fillings" will be read by Mr. E. Lloyd-Williams. Casual communications will be given by Messrs. H. Rose, J. F. Colyer and others.

ODONTO CHIRURGICAL SOCIETY. — The annual dinner of the Odonto-Chirurgical Society and L.D.S.'s will take place in the Balmoral Hotel, Edinburgh, on Friday, March 15.

GOLD aluminium is the name given to one of the newest aluminium alloys, and is said to resemble gold in colour. It is easily cleaned, and retains its polish with much less care than sterling silver.

A SATURATED solution of camphor and chloroform is recommended by a writer to *Items of Interest* as useful for relieving that form of pain which sometimes occurs immediately after extraction.

ERRATUM.—In the January issue, on page 54 line 15, Sir Horace Davey should have read Sir Humphry Davy.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Should Dentists administer Nitrous Oxide?

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—The question as to whether or not dental surgeons should administer "gas" without the presence of a medical man should be looked at from a common sense point of view.

Firstly, they have done so in the majority of cases ever since the introduction of the gas more than twenty years ago.

Secondly, no complaint has ever been made by the public.

Thirdly, in four out of five cases of deaths under the gas which occur to me now (viz., the Exeter case, the Dental Hospital case, the recent case in the city, the one in Scotland, and one which was not publicly mentioned), a medical man was present. In the Scotch case I believe no medical man was present, but death in this case was considered to be due to fright and tight-lacing.

The presence of a medical man does not therefore appear to be a complete safeguard. It is comforting to have a medical man present, so that the responsibility may be transferred to him should a death occur, and it is convenient and really most useful for London dentists to have at their beck and call a number of skilled anæsthetists; but what is the country dentist to do? It is not an easy matter "to get hold" of a medical man just when you want him. A patient comes in who has just screwed her courage up to the sticking point, a suggestion of making an appointment is met with an imploring look and almost a prayer that you will not send her away, but attend to her as soon as possible. Am I to send my servant running all over the town in search of a "medico" who is engaged in paying his usual visits? If I send for him during his consultation hours, will he be able to come at once? I have often waited and kept other patients waiting an hour or more (for the doctor will not wait when he does come), and then been obliged (in his absence) to administer the gas myself, and as I am usually fully occupied, this is neither pleasant nor profitable.

Now that policemen are being instructed in the most approved methods of resuscitation, is it too much to presume that a dentist is capable of doing all that can be done should anything unforeseen occur?

The one thing that a dentist would probably hesitate to do and which might save life is the performance of tracheotomy; I think, therefore, the question as to whether or not a dentist is justified in performing tracheotomy might be discussed with far more profit than as to whether or not he should "give gas." More patients appear to have died after the extraction of teeth (owing to the foul or unhealthy condition of the mouth poisoning the wound) than have passed away under the gas. Should not, therefore, every dentist prescribe antiseptic treatment, and see the patient several times after every case of extraction, or, better still, should he not call a medical man in at the time of the operation (gas or no gas) and leave the patient in his charge for further treatment? If we are to take extraordinary precautions, why not do it all round?

Yours faithfully,
EXCAVATOR.

The New Columbia Dental Chair.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—In your issue of January 15 this year, under the heading "New Inventions, &c.," you give a description of the "new Columbia dental chair," and state that "the agents in this country are Messrs. G. W. Rutterford and Son." This is misleading, as the manufacturers informed me that they would not appoint any sole agents in this country, and Messrs. Rutterford are only agents in the same way that I am, or any other of the Dental Depots who sell this chair.

Yours faithfully,
56, Great Marlborough Street, London, W. FRANCIS LEPPER.

Hospitals in Fact and Fiction.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—A long illness has prevented me from acknowledging your courtesy in kindly sending me the number of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION, in which you comment upon "Janey's" account of her experiences at the Dental Institution. You are quite right as to the way in which I obtained that item of the story. The girl gave it to me exactly as I describe, and, as she was in all respects the character I represent her to be, I am bound to say I believed her; but in publishing the story I certainly never dreamt of casting any imputation either on the general conduct of a charitable institution or on the character of members of the profession. I have myself only too much reason to be grateful for the kindness, skill, courtesy, and consideration I have received from many of the latter, both at home and abroad, to speak of them with anything but the greatest respect.

Amongst the students, however, you must allow that it is possible that there may be black sheep. Doubtless, any such are promptly weeded out of the profession eventually; but even in a short career an ill-nature may find it possible to inflict needless suffering, and it was to this possibility that I desired to direct attention. Those in authority cannot know all that goes on even in the best regulated institutions, and very ugly, as well as very amusing stories come to us about the pranks of students in all professions—more especially, perhaps, in the various branches of the medical profession. I cannot think, however, that intelligent members of the community would cease to support an admirable charity because of the occurrence in it of some doubtless isolated incident like that which I describe, and I certainly expect, as well as hope, to hear that the Dental charities of London, as well as all other dental charities, are as prosperous as ever and as they deserve to be.

I will add a note to "Janey" when a new edition gives me an opportunity of doing so; and, in the meantime, I hope you will make any use of this letter which you may think advisable.

Villa Mignonne, Cannes, France.

Faithfully yours,

January 22, 1895.

SARAH GRAND.

APPOINTMENTS.

JAS. M. McCASH, L.D.S.Glas., to be Honorary Dental Surgeon to the Victoria Infirmary, Glasgow.

JOHN S. AMOORE to the Senior Staff of the Edinburgh Dental Hospital, *vice* Andrew Wilson, resigned.

HERBERT B. EZARD to the Assistant Staff of the Edinburgh Dental Hospital, *vice* John S. Amoire, promoted.

HAROLD E. BULLEN, L.D.S.Glas., Dental Surgeon to the Royal Cornwall Infirmary, Truro.

BOOKS RECEIVED.

HELPS IN SICKNESS AND TO HEALTH : WHERE TO GO AND WHAT TO DO, by Henry C. Burdett. *London* : The Scientific Press, Limited, 428, Strand, W.C., 1894, pp. 484.

TRATTATO DI EMBRIOLOGIA DENTARIA (ANATOMIA, FISILOGIA, CHIMICA DEI DENTI ED ANOMALIE DENTAIRE), del Prof. Guiseppe Cali, Napoli, 1893, pp. 72.

THE INTERNATIONAL JOURNAL OF MICROSCOPY AND NATURAL SCIENCE. THE JOURNAL OF THE POSTAL MICROSCOPICAL SOCIETY. Vol. v., part 25, Jan., 1895.

The British Journal of Dental Science, Transactions of the Students' Society of the Dental Hospital of London, Dominion Dental Journal, Revue Odontologique, The Transactions of the Odontological Society of Great Britain, The Dental Journal of the University of Michigan, Le Progres Dentaire, The Dental Register, The Dental Digest, La Odontologia, The Dental Review, Revue Internationali de Médecine et de Chirurgie Pratiques, The Dental Practitioner and Advertiser, The Birmingham Medical Review, The Dental Record, The Chemist and Druggist, The Pharmaceutical Journal, Guy's Hospital Gazette, Clinical Sketches, The Dental Cosmos, The Pennsylvania School Journal, The Free Press (Wexford), Items of Interest, The Ohio Dental Journal, The Transactions of the Guy's Hospital Dental Society, The Liverpool Daily Post, The Dublin Journal of Medical Science, The Medical Press and Circular.

Letters and other Communications received from :—

W. Cass Grayston, A. W. Harlan, James M. McCash, J. J. Davey, F. Jeffrey Bell, W. Bowman Macleod, L. Jeffreys, J. O'Duffy, I. Renshaw, J. A. Lees, F. V. Richardson, H. Bullen, A. Sherman.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 3. MARCH 15, 1895. VOL. XVI.

Parents' Liabilities.

THERE has been a case in the Crewe County Court in which a dentist, Mr. Booth, sought to make a father liable for professional services rendered to his daughter aged 22. The plaintiff was nonsuited on the ground that there was no evidence that the defendant had given his daughter authority to go to the plaintiff to have her teeth seen to. But the plaintiff had not, as is usually the case, to pay the costs, and this seems to show that though there was no legal duty on the part of the parent, the judge thought there was a moral obligation to pay the money. Of course any professional man is liable to be met in this way by a parent when he asks to be remunerated for services rendered to a child who is of full age. He, like other people, has to trust to the general honesty of the world, which, after all, is of a fairly respectable order, for all the business relations of the world depend on credit. He

cannot ask the age of each patient and insist on getting the parent's written authority. It would do him more harm than good to act in that way. The average patient would naturally feel insulted by such insinuations against his or her probity. At the same time it is possible that this sort of defence may at any time be sprung on a practitioner, even in those cases where persons have been patients from childhood. But these occurrences are fortunately rare, and we heartily sympathise with those who are unhappy enough to be treated by their patients in the way in which Mr. Booth was. He was possibly acting unwisely in carrying the case into court—at all events, in proceeding against the father—for as far as the report before us goes he would seem to have had no evidence on which he could hope to succeed. It is a confession of weakness to talk about a moral duty on the part of the defendant to pay in such cases. If a man considers there is any moral obligation, and intends to obey it, he pays before going into court. The courts exist in all cases to enforce the law, in some cases to protect morals, and the law in these cases is as clear as daylight. A parent is no more liable than any other person for the debts of adult offspring. In other words, if he is to be made responsible it must be proved that the debt was incurred by his authority, and a little reflection shows that this rule is sound common sense. It alone prevents a parent being held responsible for his children's debts until either he or the children die. Even in the case of infants the parent is only liable for necessities. It must indeed be admitted that the law in this case at all events is merciful and even righteous; otherwise the liability of a father would have been bad enough in the days when there were only extravagant sons, and it is difficult to see where it would end now that there are "new women" daughters.

We have endeavoured to thus expound the law because,

if it appears to work a hardship in one case, people who do not conceive the broad principles on which a decision is based are apt to cry out that the law is an ass. Every case has to be looked at through spectacles other than those of the parties immediately concerned. The majority of people can only use their own glasses, and we can well imagine the chortle of joy there would have been if an advertising quack who is on the Register had been met by the defence that was raised in the case under consideration.

Dental Surgery in the Cape of Good Hope.

A PERUSAL of the *Medical and Pharmacy Register* for the colony of the Cape of Good Hope, dated 1894, gives a good idea of the rapid progress made in dental education by the colony during the last few years.

In one respect the colony is in advance of the mother country, in that the Colonial Medical Council has amongst its members a dental surgeon ; and one has not to look far to see how much time is saved, and many technical points easily settled by his presence at the Council Board :—"all dental business being submitted to him for advice before being finally dealt with."

It is curious to note that although steps have been taken in many cases to enforce the law against unregistered dental practitioners, actual prosecution has not been resorted to, as the persons warned have in all instances migrated to the neighbouring states where no conditions regulating dental practice exist.

During the year a rule has been made "fixing a minimum curriculum of three years as a *sine qua non* for all dental diplomas recognisable by the Council." This might with advantage have been extended to four, and already signs are not wanting in this country that even

that period is hardly sufficient for the student to obtain the requisite knowledge to make a competent practitioner.

The report contains two very important suggestions for the amendment of the Act of 1891.

The first, that "Every medical practitioner shall be entitled to practise as a dentist;" the second, that the wording of the Act should be amended so as to prohibit the *practice* of surgical or mechanical dentistry by other than a duly licensed and registered dentist or medical man; "a consummation devoutly to be wished" by the medical and dental professions here as well as by our colonial brethren.

Altogether the report shows that the authorities are keenly alive to the fact that the public requires protection in the matter of dentistry from the evil practices of quacks and charlatans.

Prosecution under the Dental Act.

THE *Starlingham Echo* for February 27, 1895, contains a short notice of a successful prosecution under the Dental Act of 1878, carried out, as far as can be gathered from the report, at the instance of the police. The defendant, a hairdresser by trade, was charged in the first instance with stealing the sum of £2 10s. from a customer. On this count he was released, but immediately afterwards charged with using the name of dentist. To this he pleaded guilty. From the evidence given by Mr. Kirby, who appeared on behalf of the police, the defendant made it a practice to examine his patients' teeth, clean them with "squirts of salts, a very strong lotion," and then make a most exorbitant fee. Ignorance of the law was set up as a plea, but a fine of £10 with 25 sh. costs was imposed.

Annual Meeting.

THE annual meeting of the Association will be held at Edinburgh in August. Members wishing to read papers or give demonstrations, are asked to send in their names to the Hon. Sec., 40, Leicester Square, London, W.C.

ASSOCIATION INTELLIGENCE.

Midland Counties Branch.

A MEETING of the members of this branch was held at the Great Northern Hotel, Bradford, on Saturday evening, February 23, at which between forty and fifty members were present. In the absence of Mr. R. Rogers (President), Mr. T. E. KING presided over the meeting.

The CHAIRMAN read the circular convening the meeting, after which the HON. SECRETARY read letters from Messrs. R. Rogers, G. Brunton, W. H. Waite, T. Murphy, F. Harrison, and W. E. Harding, regretting their inability to attend the meeting.

Information having been received of the death of Mr. Joseph Harrison, of Sheffield, one of the past presidents of the branch, it was resolved—"That the hon. sec. be requested to send a letter of condolence to the family of the late Mr. Joseph Harrison, of Sheffield."

The CHAIRMAN then called upon Mr. T. Gaddes, L.D.S.Eng. and Edin., for his paper on "The Ethics of the Dental Profession."*

This was followed by a short paper on the same subject by Mr. Frederick Rose, L.D.S.Eng.,* followed by Mr. T. E. King and Mr. H. Blandy.

The following discussion took place :—

Mr. T. E. KING : From the opportunities that I have had for observation I feel satisfied that the ethical position of the profession is steadily improving, and I believe that it is to the British Dental Association to a great extent that we are indebted for this improvement. Acts of Parliament and regulations of the General Medical Council are all very well in their way, and are useful safeguards against a state of anarchy or chaos, but it is to general culture and self reliance that we should look for the permanent elevation of our ethical status. It is well to bear in mind that other professions and callings exist more ancient than our own, and we should do well to consider what they have done and are doing to maintain the position which they

* Published as an Original Communication.

occupy. You will find that in all the other professions which are protected by Act of Parliament that there is a distinct line of demarcation, and the public have ample opportunity to find out who are the regular practitioners and who are the outsiders. But in our own profession we find a different state of things. Although we have an Act of Parliament to protect us, the public have no opportunity of knowing who are the qualified practitioners and who are not; and we find a host of men springing up who have no difficulty in making the public believe that they have just as much right to practise dentistry as any one else. Our object should, I think, be rather to find out a means of drawing a more distinct line between the professional dentist and the outsider, than to attempt to stamp him out altogether.

Mr. BLANDY said he was sure they would all welcome Mr. Gaddes back from America, especially as he had come to help them in their campaign for securing further dental reforms. Mr. Gaddes had said that he thought there was less advertising now than there was sixteen years ago, but he ventured to think that when he saw the advertisements which he now stretched over the table in their almost myriad forms, he would admit that he had been too sanguine as to the improvement, and would rewrite that part of his paper. There was undoubtedly more and more advertising, and advertising had become wider and more adroit. He thought when the pamphlets of the numerous dental institutes and dental companies were examined, that Mr. Gaddes would admit there was a new development. Mr. Blandy then produced various certificates, duly stamped from Somerset House, showing the composition of one of these companies, which had been established with £1,000 capital and had seven £1 shares taken up—three being by women—one share only being taken up by a registered dentist, who was managing the concern, but had since left. Mr. Blandy also referred to the case of Zebulon Goodman, reported in the *British Journal of Dental Science*, just issued, the evidence showing that this man was travelling about in Africa, establishing similar dental institutes, merely as money speculations. He quite agreed with Mr. Gaddes that they who resort to advertising and other objectionable methods were to be included in the 3,000 who, for the most part, attained registration by "bluffing" the General Medical Council. For out of the large collection of advertisements on the table only three were issued by L.D.S. men, two having the English, and one the Irish, diplomas. Mr. Blandy exhibited collections of advertisements which he had made for the purpose of going to the General Medical Council, with photographs, drawings and affidavits, to show the members the immense amount of trouble and care it took to get up a case in a complete way, but he hoped after the test cases were secured that the path of purgation of the Register would be easier.

As to the statement of Mr. Gaddes, that out of 1,226 qualified men,

only 668 are members of the British Dental Association, he looked upon it with great sorrow; this might be supplemented by the statement that out of 5,000 registered dentists, barely 900 were members of the British Dental Association. He much regretted it, as, if properly worked, the Society was one capable of doing much good. He would read them an extract from a letter he had received from Edinburgh lately, dated February 17, which might throw some light on the reasons why more men would not join this Society. The writer said:—"A great many of our recently qualified men positively refuse to join the British Dental Association, holding it an impotent body, and of no assistance whatever to the young practitioner. I cannot but hold with them, as our branch is one of the worst-managed societies one can well imagine. Every little town or country village in Scotland has now its unqualified, unregistered working dentist. At one time notice of these upstarts was brought before our meetings, much discussed, and everyone agreeing something must be done, the matter being placed in Mr. —'s hands to bring before the British Dental Association. I myself brought up two new cases, asking that they be communicated to the Business Committee, supplying the advertisements and photographs. I heard no more and can get no information anent the reason for non-interference beyond 'the time is not ripe, and give these men time and they will die out.' Such cases as these, which are many, have disgusted the younger men here, and they will not join the British Dental Association. Our students are allowed to practise as they think fit, no code of ethics being encouraged in them. Another student, at present attending hospital practice, owns a large establishment in one of our principal streets, with his name on windows, lamp, and brass plates; he evades the Act by using the words 'Dental Office.' . . . The whole affair is a disgrace to anybody who has the teaching of our future dentists, and it has disheartened many a student who otherwise might have been a respectable member of our profession." This is a plain, unvarnished statement of fact capable of proof. No doubt we shall hear more of it yet. Still this ought to be a powerful and splendid Association, and it ought to have taken up this advertising question, and not have left it to one member to do all this very important work.

Mr. GADDES replied, and said the advertisements certainly had astonished him.

Mr. CARTER moved a vote of thanks to Mr. Gaddes and Mr. Blandy for bringing the subject before them. He said the sight of these advertisements was quite a revelation to him, and Mr. Blandy deserved their warm thanks for all the trouble he had taken.

Mr. LADMORE appealed for more financial help, and several gentlemen in the room added their names to the list of guarantors of £5, should more money be required. This list is still open, and it is hoped that it may have at least a hundred names upon it.

Mr. BLANDY moved, Mr. GADDES seconded, and the CHAIRMAN supported the following resolution: "That the best thanks of the Midland Branch of the British Dental Association in meeting assembled at Bradford be given to the General Medical Council for their resolution in regard to dental advertising, the branch expressing the hope that the Council would continue its policy until such advertising was suppressed." This was carried unanimously.

Before this resolution was put to the meeting, Mr. BLANDY stated that the Representative Board of the British Dental Association was asked to send a similar resolution to the General Medical Council, but the matter fell to the ground, a large majority voting against it, and he suggested that the members of the branch who were present at the Representative Board meeting should explain to the meeting the action of the Representative Board.

The CHAIRMAN: Our secretary was there; perhaps he will tell us something.

The HON. SECRETARY: In answer to the inquiry the position is simply this. Mr. Blandy sent a petition, very largely signed, to the General Medical Council, asking that body to pass a resolution to make it "unprofessional and infamous or disgraceful conduct" for a dentist to advertise. The General Medical Council considered the petition, and passed a resolution upon it, which may or may not be satisfactory. Then Mr. Blandy asks the Representative Board to pass a resolution thanking the General Medical Council for considering the petition which Mr. Blandy sent to that body, which petition the Representative Board had nothing to do with. This the Representative Board, by the adverse vote, declined to do, as it would in a sense be patting Mr. Blandy on the back.

Mr. BLANDY: I don't think our secretary's statement of the case is quite correct.

The SECRETARY: At all events I have simply given you my own opinion.

The CHAIRMAN: I was present at the meeting, and Mr. Renshaw's statement is about right.

The motion, on being put to the meeting, was carried unanimously.

It was then resolved that a copy of the resolution be sent to the General Medical Council, and also to the Association.

CASUAL COMMUNICATIONS.

A number of micro-photographs of dental histology, by Dr. Charles Röse and Dr. Alfred Gysi, and a new amalgam balance were sent by Mr. George Brunton for inspection, he being unable to attend the meeting through illness.

The usual votes of thanks to the Chairman brought the meeting to a close.

At the Council Meeting in the afternoon the following gentlemen

were balloted for and elected members:—To the British Dental Association and branch—Zecharia C. Blyth (Hull), J. Leach Charter (Hull), Allen Holden (Rochdale), John Hayes Rice (Hull); to the Midland Branch only—W. H. Buckley (Oldham), Jas. John Dickie (Oldham), J. H. Edward (Manchester), W. H. Gilmour (Liverpool), John P. Roberts (Liverpool), Frederick Geo. Ward (Oldham).

The Bradford members entertained the members to a "high" tea, during which the box of the Dental Benevolent Fund was passed round, when the sum of £3 10s 6d. was realised.

The Annual Meeting of the Branch will be held at Hull on June 21 and 22. Members desirous of contributing papers, casual communications, or giving demonstrations, are requested to communicate with the hon. sec. as early as possible.

West of Scotland Branch.

THE West of Scotland Branch held a meeting in the Library of the Faculty of Physicians and Surgeons, Glasgow, on Thursday, February 28, at which Mr. Dall gave a limelight demonstration, illustrating ancient and modern methods of inlaying of teeth with porcelain or other substances. The following is a short *résumé* of the demonstration:—

Mr. DALL remarked that it was exactly six years since he gave his first experiences of inlay work. He had practised it ever since, and the methods he then adopted he still utilised. He drew attention to the fact that some inlay work in combination with gold, that he did six years ago for a gentleman and showed at the meeting on that evening, was just as good as ever.

He proposed in his remarks to deal with simple compound and complex cavities, and if time permitted, fractures of the teeth simple and compound.

A simple cavity was defined as "a cavity that can be filled by a single piece of porcelain" for not only can inlays be inserted on the labial, buccal, and coronal surfaces, etc., but disto-labial and mesio-labial cavities may be filled. These two last mentioned cavities require special inlay burs which he had had made. Simple prepared cavities may be classed as regular and irregular; he classed them in this way because the methods are somewhat different. It was also necessary to distinguish the inlays, such as right and left, crescent, etc., so that the demonstration could be easily followed. His inlays were kept in boxes, and lettered and numbered according to the gauge, and some distinguished by other marks. The burs were kept in a case in much the same manner, for by adopting this method a great deal of time is saved.

Mr. Dall then explained in detail the manner in which he carried out inlaying work.

Western Counties Branch.

A COUNCIL Meeting of the above Branch will be held at the Gloucester Hotel, Weymouth, on Saturday, April 27, at 3 p.m.

Members willing to read papers or give demonstrations are requested to communicate with the secretary.

6, *Southernhay, Exeter.*

T. A. GOARD,
Hon. Sec.

ORIGINAL COMMUNICATIONS.

Some Ethical Considerations in Relation to Dental Practice.*

By J. T. CRAIG, L.D.S.Edin.

MR. PRESIDENT AND GENTLEMEN,—When asked to introduce a subject for consideration at this opening meeting of another winter session, it occurred to me that it might not be unprofitable to initiate a discussion on a subject less demonstrated perhaps than many that have preceded it, though not less practical in its bearing upon our every-day life and work, yet one withal not often dealt with either by the journals devoted to the interests of our calling or at the various meetings of our Association. But in venturing to offer you "Some Ethical Considerations in Relation to Dental Practice," let me say, at the outset, that I have nothing particularly new or startling to say, my object being but to briefly introduce the subject so as to elicit the freely expressed opinions of those whose wider experience and mature judgment would lend special interest to our meeting.

It will be hardly necessary for me to offer any lengthy definition of the title which stands at the head of my paper; suffice it to say that ethics has been briefly, yet comprehensively, defined as "the study of duty and right conduct;" and further, "that the common good of all is the supreme end or standard in subordination to which all other rules or virtues are to be determined. My subject, therefore, deals mainly with those principles which determine the inner life

* Read at a meeting of the Central Counties Branch, Birmingham, November 22, 1894.

of the practitioner, and with those principles of life and conduct the due appreciation of which will have as a necessary result the formation of that high character which is the necessary outcome of the true professional spirit, and will be exhibited in his attitude towards his professional brethren, his bearing in relation to his patients and to his medical *confrères*, and it is with reference to these three relations that I wish to discuss the question.

It has been urged that the dental profession has not yet emerged from the chaotic stage in which self-interest seems to be the prime motive power, and that to discuss the principles upon which a code of ethics might be established would be useless. In answer to this objection, may we not with some force urge that if that be the condition of our brethren—which we deny—there would be the greater need for considering the matter before us.

But one of the chief difficulties which presents itself is the somewhat formidable objection that if any particular line of conduct be enforced, or even indicated, such an attempt strikes at the root of that individual liberty which should be generously accorded to the members of a liberal profession. It has been contended, and it must be freely admitted with much force, "that a professional man is a professional man, not because of enforced obedience to special law, but by inherited instinct, and *per contra*, no amount of written law will convert a blackguard into a gentleman, nor make a charlatan a professional man."

And further, "that the necessity for a code of ethics implies, first, that the social status of the profession is such that an effort must be made to formulate in language what constitutes a gentleman. Such a status, if not acquired by antecedents, can no more be formulated in language and applied to the novice, than can wealth and all its accessories applied to the ignoramus supply that which must be inherent or be imbibed in the first teachings of parental tenderness. Secondly, the necessity for a code implies that independence of thought and action cannot be tolerated; that no individual member of the profession, no matter what may be the peculiar circumstances under which he may be placed, shall exercise the right to act as his judgment dictates; but must sink his individuality and submit to the impersonal dictates of a trades union, which absorbs both the personality and the conscience."

Notwithstanding objections of this nature, the position taken up by the British Dental Association, the Odontological Society, and similar bodies, in their terms of membership, endorsed as they are by the leading members of the profession, whilst not laying down specific rules of conduct which would indeed be impossible, makes it perfectly clear that some restraint must be put on that merely commercial view of dental practice, which would destroy its professional character instead of maintaining it in the dignity of a liberal profession, which should be the aim of every member.

We shall all agree, I feel sure, with the claim made on our behalf that "the dental profession has already earned, and holds without question, the title of a 'liberal profession.' It does this in consequence of the position assumed by the large majority of its members regarding patents and secret processes of whatever nature. These they have not only discouraged, but when possessed by its members, such have, in consequence thereof, forfeited their rights to full membership in its best organisations. Also, knowledge which is deemed of value or advantage belonging to one is, as a rule, freely given to all others desiring or appreciating the same. Its position in the healing art, with its marked capacity for anticipating and preventing suffering, as well as relieving the same, classes it with other important and honourable professions, and secures for it a position dignified and unrivalled."

At the various social gatherings of our Association this position is fully recognised, and it has often been the proud boast of post-prandial orators, when amidst a "feast of reason and flow of soul," they have reviewed the progress we have made, that the true professional status has been achieved; but it yet behoves us to ever bear in mind that this statement can only be maintained as each member is actuated by high principles of professional duty.

Bacon defines the relation of the professional man to his profession or calling as follows: "I hold every man a debtor to his profession; from the which men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves, by way of amends, to be a help and ornament thereto."

Commenting upon this, the editor of a leading American dental journal wisely says: "No man who accepts the dignity,

the honours or the emoluments of a profession has a right to withhold from the common store any thought or achievement which will add to the sum-total of its riches. Whatsoever in the way of advanced ideas comes to him must be, if he does his duty, placed at the disposal of his *confrères*."

And this duty is just as binding upon the humblest member as upon the most eminent. Men are apt to look to their so-called leaders for all the progress they make; to accept the dictum and await the approving nod of authority before they decide to adopt this or that procedure.

This is all wrong. Every man should be, to some extent at least, an investigator. There is no real professional man whose attainments are so meagre that he cannot be of value to his profession if he directs his energies properly. It is a perfectly safe proposition that any member of any profession can, by studiously applying himself to any one subject within his purview, add to the general store of knowledge of that subject. Few can hope to be masters of all; everyone can master a particular subject, and this while keeping informed in a general way upon all, and so prepare himself to discharge in kind a portion of his obligation.

It is recorded that the late Sir Morell Mackenzie, in an address before the Laryngological and Rhinological Society, said: "No man with the opportunity of making even the most trivial original observation has the right to keep it to himself, it must be added to the common store;" and then he quotes from Carlyle, "Be no longer a chaos but a world, or even a worldkin. Produce! produce! were it but the pitifullest infinitesimal fraction of a product, produce it in God's name; 'tis the utmost thou hast in thee, out with it."

It is in this connection that the distinction between business and professional ethics is most forcibly shown, for there is undoubtedly a wide difference between them, and this difference springs from the inherent nature, purpose, and aim of the two. It has been contended, and with much force, that the logical, essential and consistent aim of business is the multiplication of values, the development of markets, the increase of profits. The improvement in the state of society arising from the increase of creature comforts inseparable from the development of business are accidents, accompaniments, not essentials or aims. It is not, therefore, dishonour-

able from a business point of view to take advantage of a monopoly and to raise prices when a demand increases. Such things are a business man's opportunities, from the successful observation and use of which his fame and fortune grow.

Without discrediting the purposes of business, nor the methods which perfect consistency with these purposes allows, the question next arises, "Are these the aims of a profession, or are its functions of a higher and nobler character? Is it the aim of a profession pure and simple that its members acquire wealth, or that they successfully, honourably and conscientiously enable it to discharge its appointed functions to humanity?"

It is usually regarded as unprofessional for a physician, for instance, to refuse to relieve suffering, though the sufferer should be unable to adequately pay for the services rendered, or to take advantage of the extremity of his patient by charging an exorbitant fee, or to suffer the character of his services to deteriorate from the consideration of probable scanty remuneration, and if dentists are to maintain this claim to be regarded as a liberal profession, the same principles must be observed—modified, of course, by the somewhat different environment in which they practise.

But upon this point let me not be misunderstood. It would be folly to even hint that dentists are pursuing their calling out of pure philanthropy or "to relieve the stress of genius." The pleasures and amenities of life possible to the successful practitioner, and enjoyed, happily, by many of our contemporaries, must ever be the object of happy anticipation to the student, a source of constant stimulus to the busy man, and when acquired, a profound consolation in later years and decline, when, relieved from the strain and stress of life, he is able to look back upon an honourable career of usefulness and to enjoy

"That which should accompany old age,
As honour, love, obedience, troops of friends."

In the hurry and rush of modern life, the principles I have endeavoured to set forth are apt sometimes to be lost sight of, and justice demands that we regretfully admit, wilfully ignored, and their place taken by the merely commercial spirit which has developed into sheer charlatanism in some quarters.

This condition is doubtless to some extent due to the fact that the practice of dentistry necessitates the use of various metals and other commercial products of different values and lasting properties, and hence has arisen a system of calculating charges largely on a commercial basis. In contradistinction with this system, the theory has been advanced that, notwithstanding these differences of values, the scale of fees should be drawn up without the slightest reference to these conditions; the fee or honorarium to be received is for the *skill* of the operator only. This view entirely omits the very important item of calculating the time occupied by the operation and the probable durability of the work done.

A more fair and equitable method of calculating fees is the time basis adopted by many leading operators, as in this case the more simple operations are necessarily charged less. But a still more equitable basis seems to be that in which the permanence of the operation *ceteris paribus* may reasonably be predicated and a calculation based to some extent thereupon, for it is manifest that an operation designed to be of a permanent character is worthy of being rewarded by a higher fee than one in which the operation must of a necessity be of a temporary nature, notwithstanding the fact that the skill necessary for both may be nearly, if not quite, equal, as for instance an operation on very frail teeth which is admittedly only of a temporary nature, and the numerous expedients resorted to in order to tide over an emergency in view of more permanent treatment within a comparatively near period; or again, the insertion of artificial teeth upon gums from which the natural organs have been but recently removed, and which the ordinary course of events will render useless in a comparatively limited period.

Such operations, rendered at times absolutely necessary by the demands of society and the exigencies of modern life, are not to be placed in the same category as those in which the condition of the parts is in the best possible state for permanent treatment. In a recent editorial article the editor of the *Dental Record*, commenting on a case which had just occupied the Court of Queen's Bench (*Coffin v. Vavasour*), in which a dentist claimed thirty-six guineas for eighteen and a-quarter hours' professional service, says: "It is recognised that a guinea for half-an-hour's work is a fit and proper fee

for one to ask who occupies some eminence in his profession, and who is probably encumbered with the high expenses incident to practising in that quarter of the town to which alone those will go who are in the habit of seeking his advice. If even for the sake of argument we accept this as granted, we would ask whether professional etiquette would oblige one of the younger members who may be just entering practice to ask the same fees, or whether he may ask less till his time be fairly occupied, raising them later as his time becomes fully occupied. If he does the one he lays himself open to the reproach that he is underselling his neighbour, and perhaps friend, and should he follow the latter course he is probably offering in return less of that experience and skill which time teaches to all. These thoughts show a few of the difficulties in coming to some unity of action in the matter of charges, though much there is that might be urged in its favour. It seems to us a subject that might well occupy the attention of one of our society gatherings, for the moral weight of opinions so expressed, and of resolutions there passed, could not but be useful as a guide to numbers of our own ranks and to which attention could be called in cases of doubt."

Efforts have been made at times to fix a permanent scale of fees in a town or district, but such an arrangement is doomed to break down when a new-comer appears in the field, and indeed, all such attempts must ultimately prove abortive. Men and their work differ widely, and no dead level can be reached, much less maintained. But the whole question of fees is admittedly a difficult one to treat, and especially so in relation to the medical profession, and has, at times, given rise to heart-burnings which might, with a little foresight and arrangement, have been avoided. The dental surgeon, generously inclined towards his medical *confrère*, and who is regarded by him with reciprocal feelings, will have no difficulty in the matter, but it is not always an easy matter to arrange where there may possibly be a wife and family, and it appears to be impossible to fix any definite rule in these cases.

In relation to the dental surgeon and his brother practitioners, but little need be said, although the common ties of professional feeling are apt to be rudely severed at times by professional jealousy or the overbearing assumption with

which his generosity may be assailed. No man worthy of the name would absolutely refuse to help a reputable brother in real need or in times of pressing emergency, but it is very difficult for a man to keep on friendly terms with those neighbours who have always just run short of this thing and that, and who would turn his house into a dental supply depôt to be requisitioned at their pleasure.

But there is a class of men with whom we cannot meet on equal terms, men whose blatant pretensions loudly and vulgarly proclaimed in the public press are an insult to the profession at large and an outrage on the universally admitted rules of professional ethics, and in order to strengthen the hands of the General Medical Council in dealing effectively with duly registered dentists who may be guilty, from a professional point of view, of gross and infamous conduct, we must seek to create an effective public sentiment in the right direction.

There is a keen sense of justice, though sometimes, perhaps, of a rough-and-tumble sort, inherent in the race, which is rapidly manifested in the face of any attempt to unduly interfere with old-established custom, and more especially if that custom is no bar to legal status. We must never lose sight of the fact that, in a free country there must first be formed a strong public opinion before legal enactments can be passed. The law becomes a dead letter unless endorsed by the practically unanimous opinion and good sense of the people. It is perfectly right, and strictly within the legal powers of learned bodies granting licences and degrees, to refuse to admit as a diplomé any man who refuses to subscribe to the laws of such body "made and to be made," and such body would be acting strictly within its powers in visiting with professional ostracism those who wilfully break its laws after having subscribed to them, or who may be guilty of such practices as may reflect dishonour on such licensing corporation. But the case is somewhat different in the case of the man who practises by virtue of registration simply, and has taken upon himself no vow of allegiance to any ethical code whatsoever.

But it is urged, and not without some force, that the public is so apathetic in these matters, and so very easily led away by the specious methods and seductive sophistries of advertising men, that it is useless to expect help from that quarter.

If that be the case we must see to it that, by every means in our power, the public be educated to distinguish between the true and the false. This may be more or less effectively done by information disseminated through the medium of the press by the various meetings of the British Dental Association, and by the influence brought to bear upon the public by the recognition on the part of the medical profession of the true status of our calling. The work of dental hospitals, and the influence of all holding dental appointments, whether in provincial hospitals or in the various public and private schools and colleges, and other institutions, together with the everyday education of the people who come within the range of our influence, must result in the formation of such a sentiment as must result in giving irresistible force to our contention, and act as the lever by which we may deal satisfactorily with the evil in our ranks. But when all has been done that can reasonably be expected there will, it is to be feared, still be left those who, whilst perhaps still observing the letter, yet grievously break the spirit of the law, and whose methods of dealing betray a moral turpitude with which legal enactments are powerless to deal.

In conclusion, permit me to say that no ethical standard is worthy of our adoption that fails to enforce the need of gentleness and kindly sympathy in dealing with those who daily pass through our hands, many of whom, owing to a condition of mental suspense, are in a highly-strung condition of apprehension and alarm. All rough, unsympathetic, or uncouth treatment is to be for ever abolished from our practice, as indicating a vulgar and unprofessional habit. Nor, indeed, can we ignore the claim to our sympathy and generous treatment those who may serve us as assistants in the mechanical department of practice, and whom an ungenerous and overbearing attitude on the part of principals might drive into an antagonistic protective combination. Finally, gentlemen, the true ethical principle is founded on brotherliness, whether in relation to our immediate neighbours or to "kin beyond sea," and it is very much to be regretted that any condition should have arisen to cause a feeling of estrangement between the leaders of our profession in Great Britain and our transatlantic brethren. Doubtless, many of the practices carried on under the name of "American dentistry" have contri-

buted to the feeling of irritation which has been engendered, but we must ever bear in mind that these practices have never received the endorsement of the best minds among leading American dentists, who deplore, it may be, as much as we do, that the name of their Great Republic should be dragged through the mire as it has been by such methods. I trust the day may not be far distant when the *modus vivendi* may be established between us.

Finally, let me remind you that we meet this evening within the borders of that county which gave birth to the "immortal bard of Avon," than from whose pages, written "not for an age but for all time," I can find no more fitting words as a final incentive to a high and lofty sense of duty—

"This above all. To thine own self be true,
And it must follow as the night the day
Thou canst not then be false to any man."

Hamlet, Act I., Scene 3.

The British Dental Association and its Branches.*

By T. E. KING, L.D.S.

ALTHOUGH the British Dental Association is the most important organisation of dentists in this country, I have often observed that many of its members had a very limited knowledge of its constitution and mode of procedure; nor is this surprising when we consider the meagre reports which appear in the Association Journal of the discussions which take place at the Representative Board meetings, and the small amount of light that is thrown upon the inner workings of the Association generally.

It is now about seven years since you first sent me as your representative upon the Executive of the Association. It is to you that I am indebted for the opportunities that I have had for making myself acquainted with the working details, and for ascertaining the facts necessary for a thorough knowledge of the machinery by which our professional organisation is worked. In return I am going to-night to try to convey to you some of the information that I have gathered.

* Paper read at a meeting of the Midland Counties Branch, Manchester, Oct. 27, 1894.

When I undertook the duty of representing the Midland Branch on the Representative Board of the Association, I was fully prepared for the difficulties of my position, and quite aware that I was not a suitable man for the post. A little experience, however, proved to me that my duties were to be light. There were not many meetings of the Board, and not much was expected of us when we did meet. All the work was undertaken by committees independent of the Board, and composed of members some of whom were not even members of the Board. The names of the members of these committees were not published, but I afterwards learnt that the same names appeared on them all, and that although nominally three committees, they were composed of almost identically the same members.

Although relieved to find my duties so light, I naturally felt a little humiliated, and it occurred to me that if I was to attend the meetings simply for the honour of the thing, and to agree to what was set before me by our leaders, that I could occupy my time much better and more profitably by staying at home. But being desirous to learn all I could I willingly submitted to attend and be guided by those who had more experience in these matters than I had.

At this time an exhibition was about to be held at York, and I took advantage of this opportunity for testing the capabilities of the Association. I knew that the subject of exhibits of show cases of dental appliances by dentists at exhibitions had been under the consideration of the Association. I therefore wrote to the honorary secretary, informing him of what was taking place, and asking him to take action in the matter. I received a most courteous reply, enclosing a letter to be presented to the executive of the Exhibition Committee. On reading this letter over, however, I found that the wording and mode of expression were not calculated to have the desired effect upon the provincial mind, and after consulting with my friends I came to the conclusion that it would not be wise to make use of it, as local committees are very jealous of anything like interference from outsiders, and are prejudiced against anything coming from a centralised association. Therefore, instead of availing myself of the Association letter, I called upon the dentists residing in the town, and after a little deliberation we were able to draw up a memorial, which

was presented to the exhibition committee. This proved entirely successful, and produced a good impression upon the committee, and no exhibits of dentists' show cases were to be seen at the exhibition, and no prize medals were awarded, as had been done when previous exhibitions had been held at York.

So far my experience seemed to show that the position I held on the executive did not give me much influence over the work of the Association, and that the Association was not to be of service to me, at any rate, so far as the prevention of dental exhibits at exhibitions were concerned.

Feeling that this state of things was not altogether satisfactory, I set to work to find out how it came about, and if there was any means of remedying it.

I found that our Association was based on the same construction as most other Associations, and that our bye-laws were copied almost word for word from those of the British Medical Association, except those which had reference to the branches; these had been modified evidently with the intention of centralising the work as much as possible. This seemed to me to be the point on which our Association differed from all the others, and it naturally occurred to me that it was in this direction that we should look if we wished to find a remedy for our weakness, and that we might do well to take a lesson from some of the older and more experienced Associations.

I found that even the president of our Association, although elected by the members at the annual meeting, and nominally at the head of the Association, had no place on any of the executive committees, and had very little opportunity of knowing what was going on, or of taking any part in the work of the Association, except at the annual meeting.

Feeling that this would be a good point upon which to test the feeling of the executive, and for ascertaining its influence, I brought the question of the president's position before the Representative Board. The result was that the following resolution was passed by a large majority: "That the president and president-elect should be *ex-officio* members of all committees." This required to be confirmed at the next annual meeting. Unfortunately, from some unexplained cause, it was not brought forward at the annual meeting in the usual manner,

and consequently did not receive the confirmation necessary before it could be embodied in the bye-laws.

I naturally felt disappointed that my efforts should prove abortive, and that the wish of the Representative Board should not be carried out. I, however, determined to try again. I gave the usual notice, and brought the subject before the Board a second time. This time there was considerable opposition; one member holding a high position on the executive going so far as to threaten to resign if the president of the Association was to be admitted on to the Publishing Committee. As my object was to gain information, and not to introduce reform, and to consolidate the Association rather than bring about disruption, I was reluctantly compelled to yield, and had to be content with the following modified resolution, which was passed and confirmed in due course at the next annual meeting: "That the president and president-elect of the Association should be *ex-officio* members of all committees *except* the Publishing Committee." I should perhaps explain in passing that the Publishing Committee is the one which has entire control over the Association Journal. It is quite independent of the Board, and is not a representative committee, as the members were appointed when the Association first took over the Journal, and they never come up for revision.

I now felt satisfied that the Representative Board occupied only a secondary position, and that there was a superior power, and that that power had entire control over such an important organ as the Association Journal.

This, gentlemen, brings me to the point which I wish you to discuss this evening. Should the Association be truly representative, or should it be an organisation for bringing the mass of the profession under the influence and control of the enlightened few? Do the branches collectively form the Association, and is the governing body to be composed of their representatives, or are they to be treated merely as offspring to be taken care of and controlled by a superior power, with the same relationship to that power that a child holds to its parent?

I think, gentlemen, that there can be no doubt that the Association was established on the principles of branch representation, and intended to be of a truly representative character.

You will many of you remember that more than one of the branches existed as separate associations, and that one was actually established, and others were in course of formation before our present Association was registered, and that amalgamation was brought about on the distinct understanding that the representative character of the Association should be a living reality, and not a mere empty name, and that we should possess advantages of a political nature equal to those of the British Medical Association.

Unfortunately, no precaution was taken to ensure that the bye-laws were so worded as to protect these political interests. The wording of our bye-law relating to the election of representatives to the governing body is ambiguous, and advantage has been taken of this ambiguity to deviate from the true principle of branch representation.

During the time I have been a member of the executive, the mode of selecting representatives has been constantly altered, and at the present time the bye-law is practically set aside. Year before last a number of representatives were nominated at a meeting of the Business Committee in opposition to those nominated by the branches in accordance with the bye-law, and it was on account of objection being taken to this proceeding that an entirely new departure was taken at the last Annual Meeting. It was then decided by the Business Committee that the retiring members of the Board did not require to be nominated, the honorary secretary being expected to ascertain if they were willing to stand again, and if so, to insert their names on the balloting papers. The result of this was that many of the branch nominees were not elected. If this continues we may soon expect to find some of the branches without any representative on the Board at all, and the principle of branch representation done away with altogether. Now, it was in the early days of the Association that Sir John Tomes gave the following warning. He then said: "The time had come when re-election should be the exception, or the Board would fail to be representative." Have we disregarded that warning? Is his prophecy to come true?

The bye-law relating to the election of representatives determines the principle upon which the government of our Association is based, and is of so great importance that we ought not to have any new construction put upon it without

thoroughly understanding what we are about, or we may innocently throw away our privileges and cripple our resources.

In considering this question we should, I think, remember that our bye-laws were drawn up when the Association was first formed, and that the Association has grown up and prospered with them in their present condition. This continual alteration in the mode of electing representatives gives rise to much discontent, and causes unnecessary waste of time and money.

It always appears to me that the framers of our bye-laws did foresee the progress and development which has taken place in the Association, and that Bye-law 18 is drawn up so as to meet the altered conditions as they present themselves.

Anyone reading the bye-law carefully will see that so long as there were no branches, the representatives were all to be nominated at the annual meeting, but as the Association increased and became divided into branches, members residing in districts comprised within the area of a branch were to be nominated by that branch instead of at the annual meeting; therefore, as the branches increased in number, the number of representatives to be nominated at the annual meeting would become gradually less and less, until such time as every part of the country became comprised within the area of one or other of the branches, when it would be no longer necessary for any to be nominated at the annual meeting. At the present time every part of the country is embraced within the area of a branch; therefore, all that is now necessary is that a limit should be put upon the number of representatives that each branch should be allowed to nominate, so that no more would be nominated than would be necessary to fill up the vacancies on the Board. The election at the annual meeting being merely formal, would be carried out in the same smooth and inexpensive manner which was originally the custom.

Now it may be said that a great change has come over the Association during the last few years, and that the state of things as I described them no longer exists. It is quite true that changes have taken place; for instance, the Business Committee is no longer an independent committee, but is regularly elected from the members of the Representative Board, but I regret to say that a great deal of the old

Bismarckian principle still lingers. The branches are gradually losing their privileges, and a down-grade tendency prevails.

It is but a very few years ago that many of the branches expressed themselves strongly in favour of being allowed to elect their representatives, and a resolution was passed by the Representative Board to the effect that, in the opinion of the Board, it is desirable that the branches shall have power to elect their representatives instead of merely nominating them. Although this resolution was passed by a very large majority, 20 votes to three, nothing came of it, and the will of the branches remains in abeyance.

It has been recently decided that a limit should be put upon the expenditure incurred at the annual meetings when the meetings are held at the invitation of a branch. The amount to be allowed for reporting branch meetings has been curtailed, and to crown all, the last annual meeting was conducted entirely from head quarters. No annual meeting committee was appointed, and the entire expense had to be borne by the Association.

When an effort was made some years ago to amend the Medical Act, the Association authorised a representative to watch over the interests of dentists. At the present time, as you are many of you aware, another attempt is being made in that direction, but dental interests are left to our friend, Mr. Blandy, and others acting independently and without any authority from the Representative Board.

Now, if the principle of branch representation is not to be recognised, and in the face of the centralisation which is going on, and the paralysing effect it is producing, would it not be better that each branch should again become, as most of them originally were, separate and independent associations? The individual members could still remain members of the parent Association, and would have all the privileges with regard to voting, nominating representatives, &c., that they possess at present. They could give their support to a strong executive composed of members residing in London, and at the same time be free to act on their own account in their own districts when occasion required.

I consider that it is wrong of us to expect a few busy West End practitioners to understand and enter into the details of

the various questions which concern the general run of practitioners, who have to do the work of the public in all parts of the country. There can be no reason why each district should not undertake work in connection with the carrying out of the Dentists Act, and at the same time do it much better than a committee centralised in London. Cases are constantly being sent up to the Business Committee of the Association which occupy a great deal of valuable time and then prove abortive, which, if undertaken by a local committee on the spot, could be disposed of with little trouble or expense.

All the most important events that have taken place during the time that I have been a member of the executive, such, for instance, as the suspension of Clause 37 of the Dentists Act, the regulations of the General Medical Council with regard to covering, &c., have been brought about by influence outside the Business Committee.

My early experience in the case of exhibits of dental showcases at the York exhibition, and more recently in the case of the administration of anæsthetics for unregistered practitioners by medical men, convinces me that we make a great mistake if we recklessly hand ourselves and our interests over to be taken care of by others whose surroundings are so different from our own.

The Ethical Status of the Dental Profession.*

By THOMAS GADDES, M.D., &c., U.S.A., L.D.S.Eng. and Edin.

LATE DEAN OF THE NATIONAL DENTAL COLLEGE, LONDON, AND ALSO OF
THE DENTAL DEPARTMENT OF THE UNIVERSITY OF DENVER, U.S.A.

THE two objects for which the British Dental Association was established are : (1) "the promotion of dental and the allied sciences, and (2) the maintenance of the honour and the interests of the dental profession." A consideration of the ethical status of the profession is, therefore, distinctly within the jurisdiction of this meeting of the Midland Branch of the Association.

* A paper read at a meeting of the Midland Branch, held at Bradford, Feb. 23, 1895.

Is the ethical condition of the profession to-day better or worse than it was sixteen years ago when the British Dental Association was formed? This is the general question which I now submit. To that question may be given, with some show of reason, the paradoxical answer that the profession is both (a) better, and (b) worse.

(a) The working of the Dentists Act, 1878, the influence of the British Dental Association, and the elevating tendencies of education (shall I use the old watchword "compulsory education"?) have done much to reduce the number of advertisers, to modify the character of the advertisements, and to elevate the general ethical status of the dental profession. At the time of the passing of the Act the number of *bona fide* dentists was computed at about 2,000. Of that number 370 possessed a qualification in either medicine, surgery, or dentistry. There were in that manner 370 qualified, and about 1,630 non-diplomaed but *bona fide* dentists. When registration was completed in August, 1879, there were found to be some 3,000 more than the computed number of *bona fide* dentists. Now, I am disposed to affirm that of the real *bona fide*, but non-diplomaed, dentists—i.e., the 2,000, minus the men who were qualified—there is a marked improvement in the professional decorum. Many (nearly 700) have obtained the L.D.S. qualification of one or other of the several licensing corporations, and probably more have come into line with the requirements of professional conduct. As an important factor in the latter advancement the agency of the British Dental Association cannot be doubted. Furthermore, the recruits who have entered the portals by education—*per curriculo*—have had, directly and indirectly, a noteworthy leavening effect, not of a gaseous evanescence, but an influence in promoting a real, solid, conspicuous ethical advancement.

In 1878 the percentage of qualified to the total computed *bona fide* dentists was about eighteen. In August, 1879, when registration was completed, the percentage of qualified to the total number registered was 10·12, whereas in January, 1895, the percentage was 29·02. Clearly, then, education is in the ascendant, while the percentage of unqualified is rapidly diminishing (89·92 in 1879, and 70·98 in 1895). As I mentioned in the editorial pages of the *Monthly Review of*

Dental Surgery in 1877, amidst the clamour and wrangling then existing, "we have already pointed out that the true way to advance the profession is by education, and, consequently, by providing educational facilities;" and also "taken generally, the units of a society having had a systematic and varied training must, as a correlative, improve the nature of the society whose units had no such training." As a result of those several factors (the Dentists Act, the British Dental Association and education—education in its more comprehensive sense), I do assert that our profession occupies a higher status of usefulness to the public, and also of intellectual and ethical culture, than it did sixteen years ago.

(b) If the dental profession has so evolved in that satisfactory manner, what of the unfavourable answer to the general question? Evidence points with much clearness to the conclusion that those who follow our calling, and resort to the various advertising and other objectionable methods are to be included amongst that 3,000 who, for the most part, obtained registration by "bluffing" the Medical Council. The claims of those "black legs" to having been in *bona fide* practice of dentistry at the passing of the Act were accepted by the Medical Council—indeed, there was practically no scrutiny, no question of the truthfulness of their declaration, beyond the clerical routine of the office, which was at that time inundated with applications for registration. If these are the chief sinners of to-day—and the Medical Council *did* accept the claims of those chief sinners merely upon their own unattested statements—then the profession has a strong case in urging the Medical Council to use its most stringent powers to bring within tolerable ethical bounds this renegade group whom the Council admitted to the Register. It is in consequence of the conduct of this section of those who are registered as dentists, that the answer can be given to my general question that the ethical status is worse to-day than it was sixteen years ago. The delinquents who are registered, and those parasites who have no right to the title "dentist," but who carry on their "trade" by, in most cases, evading the law—these individuals resort to methods which allure and deceive the public quite as successfully as did the charlatans of years gone by.

In June, 1878,* I wrote, and I would now reiterate the principle then set forth: "The necessity for the protection of the profession and the public from the nefarious practices of the alluring charlatan and rogue has long been felt by all who have given the subject honest consideration. How far this Act will be effectual in preventing the abuses its several clauses are framed to meet, we cannot predict. But that the Act alone will not elevate the tone of the profession as now constituted, few will deny. Just as all true discipline is only to be found where there is a reverence for the principles of discipline, and not in a reverence for the power which enforces that discipline, so only will the dental profession be elevated in the social scale as its individual members do that which is professionally right with a right mind."

While there are just grounds for forming this encouraging estimate of our professional progress, we must not be too self-satisfied and self-congratulatory. There are omissions and commissions even among those dignified with a qualification. There yet is need for a further infusing of the ethical conception of doing "that which is professionally right with a right mind." Just as the poor is always with us, so, too, will there ever be delinquents in our ranks, as there are in every other calling.

In 1879† a correspondent wrote me "that a lady had a tooth filled by a dentist some ten years ago. The operation appears to have been pretty successful, for the patient had no occasion to visit the dentist again until a few weeks ago, and then to have another tooth filled. In the meantime the dentist had forgotten his previous operation, and said, 'Oh, I see you have had a tooth filled on the other side of your mouth; whoever did that knew nothing of his profession. It has not been properly cleaned, and the stuff he has placed in it is utter rubbish. It is a great pity such incompetent persons are allowed to practise.' In due time the orator was informed that he was descanting upon his own work." That spirit of uncharitableness is not yet dead.

As a minor shortcoming there is this fact, that of the 1,422 qualified dentists, little more than one half only (850) are

* *Monthly Review of Dental Surgery*, p. 232.

† *Ibid.*, p. 189.

members of the British Dental Association. I take it as one of the first duties which a man owes to his profession is to give his support to that Association which has, indubitably, done so much for the advancement of the vocation he has chosen. Yet there are over 550 qualified dentists who are oblivious to this ethical as well as political obligation.

The dentist is placed in a position of trust, and it behoves him to be true to himself and true to his patient—to maintain that personal honour and integrity which become a professional gentleman—and thus help forward the ethical status of a noble profession.

The Ethical Status of the Dental Profession.

By FREDERICK ROSE, L.D.S.Eng.

MR. PRESIDENT AND GENTLEMEN,—My friend, Dr. Gaddes, kindly furnished me with a short digest of the paper we have listened to this evening, and, while I endorse all he says in the main, I shall endeavour in the few rough notes I have strung together since receiving his *résumé*, to place the same subject before you as it presents itself to me.

I have tried to approach it without the bias necessarily consequent on being a member of the British Dental Association, and of having lived in a professional atmosphere all my life; but as a man who has emanated from trade surroundings, as many of our profession have done and are doing imbued with the spirit of trade, and viewing *all* callings from this standpoint.

What, then, is the view that such a one must take of the question of advertising, as a logical necessity of the case?

He will argue with himself that advertising *per se* is not immoral, therefore no breach of *ethics*.

What is it, then, that the outcry is about?

A body of men have set up, as a standard of professional conduct, a certain arbitrary, but somewhat nebulous rule of conduct, called *etiquette*.

If you ask for a definite guide as to what you are to do, or not to do, you are told "your own professional instincts must be your guide." Yes, but suppose, as in the case of my hypothetical friend whom for the nonce I am endeavouring

to impersonate, I have *no* professional instincts? You ask for bread and they give you a stone.

Carrying on the same idea. Possibly I am an honest and truthful man, but without any professional instincts, having come of tradesman stock; feeling that advertising *per se* is not immoral, thrown on my own resources for guidance, possibly with a growing family to provide for, and harassed by money troubles, goaded by seeing incompetent men around me flourishing, while I can barely make two ends meet—think on't, ye gods of the profession, perched up on your Olympian hills made out of your money bags, particularly you who scorned not once on a time—nay, even now, some of you—who scorn not the advertisement that you may get by allowing your names to be scattered broadcast by chemists, on their tooth-powder boxes or bottles of mouth lotion, or as writers of testimonials for the merits of some particular panacea; and you who once did advertise, before you became “a respectable chap, and shone with a virtue resplendent”—think on't, I say, and then tell me where my sin is in such an advertisement as the following in the daily papers, always supposing that I really believe I *can* do what I profess to do. Mr. —, dental surgeon, begs to announce to his friends and the public, that he has opened an establishment at — Street, and is prepared to undertake all dental work at moderate fees,” &c., &c.

Now in a case like this there is no lie, therefore no breach of the ethical law. It is simply a breach of etiquette.

The public is shrewd enough to see this, and not being able to discriminate between such a man and the blatant, incompetent, lying quack, who simply tries to get all he possibly can out of their pockets by trickery, sympathises with all advertising men as a body, and, actuated by a rough notion of justice, places them on a pedestal as martyrs.

Let us, then, try and discriminate in any action we take, or we shall never get the sympathy of the general public, which is what we want. The one class can be brought into our fold by brotherly sympathy.

If we, like the Pharisee and Levite, “pass by on the other side” when we see a weaker brother struggling; if we let the Baal of *respectability* prevent us from extending a wide, liberal, whole-hearted friendship towards our poorer fellow-

worker because, perchance, he is "out at elbow" and "down on his luck," then we must blame only ourselves if he cut our acquaintance, and join the ranks of our adversaries.

We can help him in many ways. I will name one or two. Let our great hospitals keep a stricter scrutiny of the class they work for, and so send to our poorer brethren the fees that many now attended to *gratis* can easily afford to pay. Let those of our hospitals that have commenced supplying dentures cease from competing with practitioners in this line, and let those which have not yet done so hold back, if they are thinking of taking this step.

As to the other class of advertising exploiters, let us combine to try and get the powers that be to help us to purge the Register of them. I cannot help thinking that they might be got at on the plea of "obtaining money under false pretences." If we can prove dishonest conduct, even those who have succeeded in bluffing the registrar can be deprived of their registration. Once off the Register, they can be dealt with for practising without registration. This is briefly, as I take it, about the thing Mr. Blandy proposes to do, if he can get sufficient pecuniary support, either with or without the co-operation of the British Dental Association.

The College of Surgeons of England ought to be urged to make it a part of each intending licentiate's undertaking, in consideration of granting him the diploma, that he does not use any unprofessional method to get practice.

Then we should not have our diploma dragged in the mud by advertisements in the daily papers by licentiates of this college, as we see in all our Liverpool papers notoriously.

There is one powerful blow we could strike at advertising dentists. No one now can enter the profession without having previously taken out a diploma. Hence, if we can manage that no young men but those with proper professional ideas can obtain a diploma, we shall minimise at least the future evil.

To this end the dean of each hospital should submit the names of all intending candidates for the curriculum to the Medical Board for supervision; and they should scrutinise carefully the antecedents of the young man; and should refuse to admit the son or pupil of an advertising dentist to the hospital and college.

By this means we should secure (a) that every new admission to the profession should come from respectable antecedents; and (b) we should drive the advertising dentist to stop those methods, if he wanted to take pupils, or bring up sons to his own calling.

To reiterate, gentlemen! Let us not confuse the terms ethics and etiquette. While we, as honest men, endeavour on the one hand to suppress by law all breaches of the ethical code, let us on the other hand try to educate and encourage the multitude who follow our calling by a kindly sympathy and extension of the hand of good fellowship in their struggles for a living, to rise to a nobler appreciation of the other code—that of professional etiquette and gentlemanly conduct.

An Abnormal Premolar.

By J. F. RYMER, M.R.C.S., L.D.S., D.D.S.

THIS case is so peculiar, both in shape and position, that a short description may prove of interest. A lad, aged 15, came to the Brighton Dental Hospital for removal of an unsightly

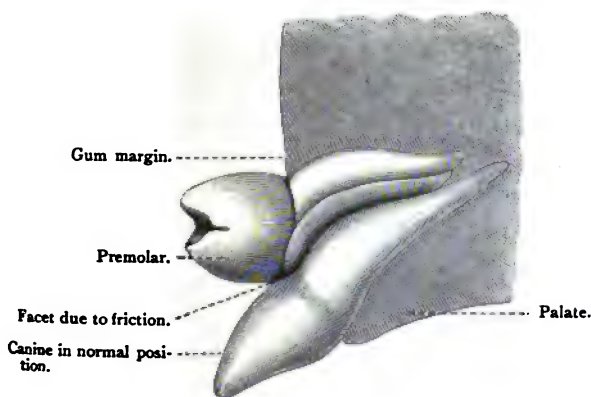


DIAGRAM A.—Showing roughly position of Canine to Premolar.

projecting tooth; this rough diagram will explain, probably better than words, the appearance.

I removed the tooth, first right upper premolar, and my

friend Mr. Caush has kindly drawn the following three diagrams for me. I have been through many works on abnormal teeth, but have failed to find one of a similar character. A point worth noting is the distinct "facet" shown on diagram A and fig. 2, due to the "play" of the

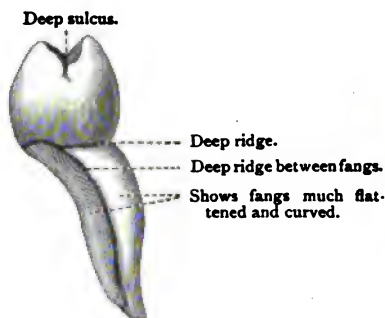


FIG. 1.
Side View of Tooth.

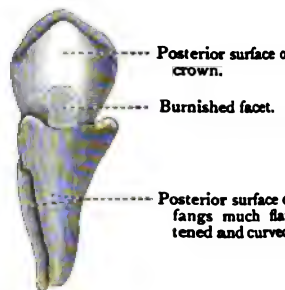


FIG. 2.
Posterior View of Tooth.

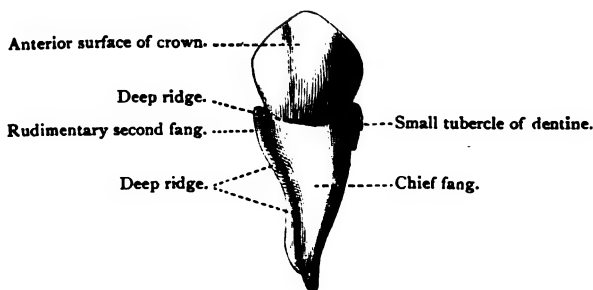


FIG. 3.—Anterior View of Tooth.

premolar upon the canine, showing although the teeth were *perfectly firm*, there must be considerable movement or "play" during mastication.

IN the report of the Dewsbury and District General Infirmary we note that Mr. Charles Rippon, the Hon. Dental Surgeon to the institution, has been made an *ex-officio* member of the Infirmary Board.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE usual monthly meeting was held on the 4th inst., Mr. R. H. WOODHOUSE (Vice-president) in the chair.

The minutes of the previous meeting having been read and confirmed, the following gentlemen were nominated for membership of the Society:—Leslie Maury Stocken, L.R.C.P.Lond., M.R.C.S.Eng., L.D.S.Eng., Winchester House, Ealing (resident); Francis R. Flintan, L.D.S.Eng., Tower Lodge, Weybridge, Surrey (non-resident).

The following gentlemen were balloted for and duly elected members:—Ridley Herschell, L.D.S.Eng., 6, Seaside Road, Eastbourne (non-resident); Percy Francklin Henry, L.D.S.Eng., 79, King William Street, City (resident); and A. E. Baker, L.R.C.P.Lond., M.R.C.S.Eng., L.D.S.Eng., 22, Grosvenor Street, W. (resident).

The CHAIRMAN said the necessary form of adherence to the rules and regulations had been signed by two non-resident members, Mr. William Sims, of Manchester, and Mr. Thomas Llewellyn Nash, of Inverness.

A letter was read from the Laryngological Society of London, inviting members to be present and participate in a discussion on the diagnosis and treatment of empyema of the antrum on March 13.

In consequence of the absence through illness of Mr. E. Lloyd-Williams, who was to have read a paper, the evening was devoted to the reception of Casual Communications.

Mr. ROSE illustrated methods of taking impressions of mouths in which, from the situation of the teeth, it was difficult, if not impossible, to take impressions in the ordinary manner. It was, of course, admitted that the impression tray should approximate in size and shape to the model, being slightly larger, so as to admit a sufficiency but not an overplus of composition. A common error was that it was necessary to take the impression on both the labial and lingual aspects, with the result, in cases where the front teeth were—from recession of the gum and other causes—long and straggling, that where the material flowed in between and around the teeth and was allowed to harden, dragging was very likely to happen. To obviate this he employed a tray with its front portion cut away, so that it could be more readily removed from the mouth than one which took the labial aspect as well. Difficulty as to length of time taken by the composition to harden was overcome by using the irrigated tray, the effect of the cold water circulation being that the composition was hardened in one or one and a-quarter minutes. With the front portion cut away it could be readily removed, and a beautiful and accurate impression obtained. In taking models where undercuts existed, he recommended that a little soft composition should be moulded into

the spaces. These pieces could, if necessary, be removed from the mouth and trimmed up. When reinserted the impression was taken in the ordinary way, and the pieces could be reinserted into the impression tray after its removal. Where there was an extreme undercut it could be taken in two pieces, using pieces of German silver roughly bent into shape so as to support the composition in the mouth. The method answered admirably where, from absorption of the gum, it was necessary to take an accurate representation of the front of the mouth. It depended for its success, first of all, in using a composition perfectly free from elasticity, in lubricating the fingers with vaseline while employing it, and in employing the smallest quantity of composition, and supporting it properly during hardening. He had said nothing new, and his only excuse was that he considered taking impressions of the mouth one of the most important operations in dental procedure.

Mr. COFFIN asked what were Mr. Rose's views as to the desirability of making special cups and trays for cases as they presented themselves. It would also be useful to know if Mr. Rose had any useful, simple method of making special trays.

Mr. W. R. HUMBY said the double tray had been invented by him. He did not know how many hundred dentists at different times. He had himself used it independently, and introduced it to his classes. The tray went into the mouth without any extra resistance, but it was necessary to be careful not to take club-shaped teeth with it, or it would set so hard that it could not be removed. Any sticks were easily removed by substituting warm for cold water in the circulating arrangement. A little lubricant should be put over any teeth presenting unusual difficulties, and ordinary soap was ever preferable to vaseline—the material seemed to have intimate contact with the teeth, and easy liberation was ensured.

Mr. HERN pointed out that in cases where the teeth were long and straggling, with large cone-shaped spaces between them, he was in the habit of filling the spaces with pellets of cotton wool or amadou, to prevent the gutta-percha running in between the teeth.

Mr. CUNNINGHAM said the discussion seemed to have proceeded on the idea that the modelling composition was the only material to be used. He (Mr. Cunningham) took first of all a rough model, had a special tray made to that, and then used gutta-percha for the impression. With regard to undercuts, he would ask, even supposing they took a great deal of trouble, taking a model in two parts, as he had done several times, and making the plate to fit that—what were they going to do then? In these questions of taking impressions, the personal equation was no doubt very important, but it was rather strange that no one had spoken of a plaster impression.

Mr. MAGGS said, some four or five years ago he brought forward, on behalf of Mr. Farmer, of Manchester, an irrigation tray. He did not

know whether Mr. Farmer originated it, but as far as he knew, that was the first time the irrigation tray was brought before the Society.

Mr. W. R. HUMBY said he had been using them for several years previously to that. Practitioners in different parts had originated the same idea, and although there was originality in each case, it could scarcely be said where the priority began.

Mr. REINHARDT said his trouble in taking both inside and outside impressions, especially the lower, where all the teeth were standing, was that he got a tremendous drag. He had never used irrigated trays, but had used a saliva injector and the ordinary bulb syringe with cold water. He would ask what methods were employed when the impressions became so very hard.

Mr. BALDWIN said the reason many members had not risen was because, while using plaster, they were glad to hear of other processes offering good results. Personally he used more plaster than any other material, but it had the disadvantage that it was often difficult to put together, and took a good deal of time. He had a special tray made for each case. It was made to a rough model and cast in tin, the handle being soldered on afterwards. This was easily done, and did not occupy more than ten minutes. With regard to priority of invention, he found an irrigation tray in his house eleven years ago. He asked whether swabbing an ordinary tray with cold water, and using a saliva injector, would not answer the same purpose as the irrigated tray.

Mr. BADCOCK thought that with gutta-percha and plaster anything could be done that was required. Gutta-percha had the advantage of not only taking undercuts with extreme faithfulness, but of remaining soft to the end. In the case of loose teeth a perfect undercut could be got and there was no drag. He had practically abandoned the use of composition in favour of gutta-percha and plaster. In reply to the chairman he said, that although water had to be used very hot for melting gutta-percha, nevertheless, owing to some peculiar quality, it did not burn the patient nearly so often as was the case with composition.

Mr. STORER BENNETT said Mr. Rose did not claim any originality for his method of taking models, and it would be remembered that some four or five years ago a practically similar method of taking undercuts by means of cores had been brought before the Society. He also felt inclined to challenge the statement that the only method of taking undercuts was the one suggested. Undoubtedly gutta-percha could be used for some purposes, but his own pet method was plaster. It had this advantage, that by carefully watching the time of breaking, the mould could be removed piece by piece, and so take an impression of the loosest teeth. He challenged the statement made by Mr. Cunningham, that when the impression of the undercut had been obtained it was of no value. They could not have too perfect a model. Every

undercut could, as a rule, be utilised, and the method of inserting the plate from the lingual side, pushing it out towards the buccal, utilised the undercuts to a very large extent, because as the cavity was V-shaped, with the base towards the gum, the plate was held in position and could not possibly rise.

Mr. ROBBINS said in many cases of undercuts the difficulty could be got over by using plaster and composition in one and the same impression. Plaster could be built round a tooth with very much undercut ; it would set quickly ; a composition impression could be taken on that, and when removed from the mouth, by easing away the undercut plaster core and putting it in place, a fairly good model was obtained with less difficulty than by a plaster impression. He did not consider special trays a necessity ; with a decent assortment of trays one could, with a little manipulation, get a fairly good adaptation, at any rate for the first model. With regard to the undercut, he had tried plaster of Paris cores, with fairly good results. Mr. Hern had referred to the danger of dragging, owing to plaster getting between the front teeth. This might be obviated by packing with either cotton or amadou, and then a fair representation would be got without the inconvenience of dragging afterwards. Although after Mr. Hunby's demonstration some time since he had felt inclined to try the irrigated tray, he thought that with the ordinary tray just flashed over a spirit lamp and a little cold water drained upon the back, very good results could be obtained.

Mr. ROSE, in reply, said for any case presenting any difficulty he usually made a special tray. He agreed that packing spaces in front of teeth to prevent composition going into spaces or round the teeth was a great advantage. He had simply been discussing the merits of taking impressions in composition, and had not referred to the use of gutta-percha, plaster of Paris or any other material, not wishing to draw any comparisons. He used composition because it took the least possible time to mould into shape, and by its use he could produce undercuts or duplicate his impressions so quickly that two or three could be taken as against one in plaster. The composition could be readily softened when necessary by passing a stream of warm water through the irrigated plate. For mouths presenting no difficulties ordinary trays could, no doubt, be used as successfully as special trays.

Mr. HOPSON brought forward a case of a lower canine erupting through the lip. The patient, a girl aged $2\frac{1}{2}$, was brought to Guy's in January, 1878, with the cheek eaten away by phagedænic ulceration, the part affected extending from the left corner of the mouth, describing an arch about the size of a five-shilling piece. The free borders of the upper and lower lips were included. The alveolar process was laid bare and there was a very foetid smell. After treatment with nitric acid and nitrate of silver, the child went out on February 1, with the

wound granulating up well. Four months later she returned with more ulceration in the old place; this was again treated with nitric acid and nitrate of silver and some loose teeth extracted. A few pieces of necrosed alveolar process came away, but the wound granulated up well and the patient went out on June 14 with the place practically healed. Subsequently the tissues of the cheek and lips became firmly adherent to the maxilla, greatly limiting the movements of the jaws in mastication. When 13 years of age she erupted a left lower canine which pierced the lip, and having apparently tolerated this condition for six years, she came up to the hospital in January last and the tooth was removed. There was very little movement. She could separate her teeth only to the extent of about a quarter of an inch, but still was able to speak and masticate her food fairly well. A model and photograph of the case were exhibited.

Mr. A. R. COLYER exhibited a defective first permanent molar which occurred in a patient 30 years old. Having complained of swelling on the side of the face lasting for three weeks, on examination the left first permanent molar was found impacted, the grinding surface of the crown being on a level with the neck of the other teeth. A putrid discharge round the tooth had been noticed for nine months. He removed the tooth, and on the following day he found a second temporary molar in the socket which he also removed. He thought it was a case of unerupted temporary molar preventing the full eruption of the first permanent molar. He believed the temporary molar was placed between the anterior buccal root and the palatine root.

Mr. ACKERY said he brought forward a similar case two years ago of an impacted right first permanent molar in the lower jaw. It occurred in a lad about twelve years old. The bicuspid was present and the second molar in position, and he was at a loss to explain why the first permanent molar should have been prevented from getting up to its normal length. He should be glad to hear any suggestions as to the cause.

Mr. HUMBY said it was rather rare to find a first permanent molar retarded in eruption, and still more so to find more than one tooth retarded. They sometimes found a permanent molar down on the gum level as in Mr. Ackery's case, but in the case mentioned by Mr. Colyer it seemed as if the permanent tooth had come into position and had been succeeded by a temporary tooth.

The CHAIRMAN thought a tooth sometimes did get caught in that way. It seemed to be a case in which the temporary molar was caught in between the first permanent molar and the second bicuspid, and was held back in some way in the socket until the permanent tooth was removed.

Mr. HUMBY said it was sometimes very difficult to decide whether a tooth such as a first permanent molar really had ever been of full length and afterwards receded into the socket, or whether the tooth

had risen up to a certain distance and then refused to rise any higher. He had a very curious case where great pain was referred to a depressed lower molar; the tooth was extracted, but although it had been the seat of very great pain it was apparently perfectly free from caries.

Mr. STORER BENNETT mentioned a case of prolonged and intense pain after the extraction of a tooth, due to an irritated nerve being exposed at the apex of the socket, which resisted all treatment until it was incised. In November last he was consulted by a lady aged 23, who was suffering from severe periostitis in the left upper wisdom tooth. A few days previously she had undergone an operation on the right side of the mouth, which was immediately followed by pains in the left upper wisdom, with inability to insert a plate which she had worn up to that time. The operation had been performed under an anæsthetic, and the mouth kept open by a Wood's gag, which had been so unfortunately used as to dislocate the wisdom tooth on which it rested. He (Mr. Bennett) wished to venture on a word of warning in the use of this powerful instrument, which he had known to cause serious pain in many instances which had been credited to the dentist rather than to the anæsthetist who had been the real offender. The tooth had to be removed, but the socket was intensely painful, and remained so for twelve days, no application affording any relief. In the meanwhile the socket granulated healthily, except at its apex, where a spot was discovered about the size of a pin's head, which looked white in colour, in marked contrast to the red of its surroundings, and caused the greatest agony on being touched, no matter how lightly. Bearing in mind that John Hilton in his lectures described instances of ulcers and wounds which were very painful in consequence of the exposure of ends of nerves in the wounds, cases in which the pain was stopped by the division of the nerve just below the surface of the wound, it occurred to him that this was a case of a similar nature. He therefore passed the blade of a Paget's knife into the socket for about a quarter of an inch, and cut across the nerve, with the happiest result, for the pain instantly ceased, never to return.

The meeting then adjourned.

COATING ALUMINIUM WITH ZINC AND TIN.—It appears that aluminium cannot be coated with zinc, tin or lead by the ordinary processes, as these metals slide over a cleaned aluminium plate and have no tendency to alloy with it. *Invention* reports that the difficulty—due to the formation of a film of aluminium oxide—may be overcome by rubbing the plate in the metallic bath with a steel brush, when an even layer of metal adheres.

Victoria Dental Hospital.

THE Annual Meeting of the supporters of the Victoria Dental Hospital was held on February 15, at the Manchester Town Hall. In the absence of the Lord Mayor the chair was occupied by Mr. S. L. HELM.

The eleventh Annual Report of the Committee of Management was as follows:—"The Committee have to record a satisfactory but uneventful year's work. A few structural and other alterations have been made at the hospital, with a view to the greater convenience of those attending there, and have proved very satisfactory. Notwithstanding the great increase in the number of cases during the past ten years—viz., from 8,618 in 1885 to 15,191 in 1894—and the removal to larger and more expensive premises, the subscription list has not shown a proportionate increase, and has, in fact, remained practically stationary, being in the past year only £97; and the hospital has now an adverse balance at their bank of £170 12s. 9d. It seems hardly credible that the subscription list of a hospital in which, on an average, over 15,000 operations per annum have for some years past been performed, should be less than £100; but such, unfortunately, is the case. If, however, the hospital is to continue in its present state of efficiency and usefulness, additional and increased subscriptions must be forthcoming in order to pay off the debt of £170 12s. 9d., and to meet the ordinary current expenses. It is the desire of the Committee to erect upon the site which they have already acquired a building especially designed for a dental hospital, as soon as the necessary funds can be raised. Contributions in aid of this object are greatly needed."

The Dental Committee, in their Report (read by Mr. Henry Campion), stated that during the past year arrangements had been made for extending the advantages arising from the use of anæsthetics. The number of children attended during the year was 4,301, and of adults 6,402, a total of 10,703.

Mr. F. W. TRAVERS read the treasurer's report.

The CHAIRMAN proposed the adoption of the reports, and Mr. J. R. BYRNE seconded the motion, which was passed.

Mr. W. A. COPINGER proposed and Mr. S. OPPENHEIM seconded the following resolution, which was passed: "That Sir Anthony Marshall and Messrs. W. A. Copinger, J. Edgar Schunck, and J. Crewdson Waterhouse be re-elected members of the Committee of Management; that Mr. F. W. Travers be re-elected honorary treasurer; that Mr. George W. Gray be re-elected honorary secretary; and that Mr. Herbert Kidson be re-elected honorary auditor."

Thanks were given to the Committee and honorary officers on the motion of Mr. H. PILCHER, seconded by Mr. W. COGSWELL. Votes of thanks were also passed to the Lord Mayor, and to the Chairman.

MINOR NOTICES AND CRITICAL ABSTRACTS.

A Case of Compound Follicular Odontome Invading the Right Antrum of Highmore and Obstructing the Corresponding Nasal Fossa.

By A. W. DE ROALDES, M.D., New Orleans.

DANIEL A., aged 9 years, of Natchez, Miss., was brought to my office in the first days of February, 1894.

Previous history, by Dr. George W. Rembert, of Natchez: "It was in July, 1892, in the office of Dr. N. L. Guice, and by his invitation, that I first saw the little fellow. An examination revealed *two points* of disease, separate and apart, and differing in pathological conditions: (1) On the socket of the previously lost deciduous right central incisor (superior) was found a *fibrous* tissue completely filling the interspace and extending considerably below the line of the adjacent teeth; it also extended above the alveolar border. For some reason (possibly the result of pressure) there was found a deficiency of osseous structure at this point, while the surrounding bone did not appear carious. (2) Beginning opposite the right canine and extending posteriorly alongside the internal plate of the alveoli to near the tuberosity of the maxilla, and covering a considerable portion of the right palatal bone, was found located an osseous tumour (osteoma) evidently of several months' development. An appointment was given for the day following, and both tumours were removed, with the result that there has been no return of the fibrous, but a partial reproduction of the other growth.

"I again," continues the doctor, "had this little boy for a patient in the spring of 1893. At this time I found an osseous tumour located on the external plate of the alveoli, right side, superior, and covering a portion of the external surface of the right maxillary in the region of the canine fossa. With the assistance of Dr. Lamkin and Dr. Beekman, this growth was removed on June 20, 1893, and we had hoped a speedy cure might result from it; but in a very short while we discovered that there was necrosis of the maxilla at the point operated upon; and in September following, with the patient chloroformed, we succeeded in removing different fragments of dead bone, resulting in an exposure of the antrum of Highmore. At this time we saw no osseous deposit within the sinus, but noticed the growth that is now most noticeable, being external to the antrum and encroaching upon the orbital and nasal regions. Not knowing for certain whether this enlargement was a reproduction of the original disease, or but a hypertrophied condition due to the inflammatory action incident upon the necrosis, we deferred to operate, thinking it wisest to await further development. We are now convinced it is the same in character as the tumours previously removed, and agree with you in advising active surgical interference."

Upon actual examination I find young Daniel A. to be a well-built child of sound parentage, who has always enjoyed good health. No indication of any rickety tendency in early age, nor any history of a fall or blow on the face. Occupying the front of the right cheek is a uniformly hard, painless tumour, covered by sound skin, evidently

springing from the superior maxilla, and limited externally and superiorly by the malar bone and by the upper wall of the antrum of Highmore, without, however, any apparent encroachment of the orbit, although upon inquiry the child was found affected with diplopia. The growth is limited towards the middle line by the nose, which on that side of the face is somewhat flattened and more continuous with the cheek than on the other side, as if the ascending process of the maxillary bone has been lifted up slightly. An examination of the right nasal fossa reveals a marked stenosis due to the bulging in the lumen of that channel of the external wall of the fossa. There exists a slight chronic rhinitis, but no exposed bone is found by the most careful probing. The voice is somewhat nasal; there is no perversion of the sense of smell; no lachrymation; no neuralgia, and there are no ganglionic enlargements. By digital examination, the post nasal space, and especially the right choana, are found to be free of all swelling. Upon examination of the buccal cavity, a hard tumefaction of the palatal portion of the right superior maxilla is observed, which measures an inch and a-quarter antero-posteriorly and nearly an inch transversely. The external and anterior boundaries are fused with the alveolar border. This process is very much increased in width, especially in its posterior half, and on its border are to be found the following teeth, to wit: the right central incisor of second dentition (scarcely erupting), the lateral incisor, the cuspid, the second molar of the deciduous set, and the first or sixth year molar of the permanent set. In the place of the canine is to be seen an oblong, hard, exposed structure, looking like a piece of necrosed bone, but perfectly fixed in its position; between it and the second molar is a small, irregular depression, leading in the direction of the antrum, in which the patient generally packs a plug of absorbent cotton. There is no discharge of consequence, and the probe when introduced is soon arrested by a hard, denuded, bony resistance.

By forcing water through with a small antral cannula, a few drops are observed to dribble out from the right nostril. Heryng's lamp reveals an absolute opacity of the right cheek, and there was a total destruction of perception of light in the corresponding eye. The diagnosis of a benign neoplasm of the maxilla, probably an osteoma, was made with reserve. A modified Vallet's* operation was performed under the influence of chloroform. This Dr. de Roaldes described.

The main mass of the tumour was found on the floor of the antrum corresponding to the canine fossa. Considerable difficulty was found in chiselling it out on account of its eburnated consistence, and also in avoiding fracturing the alveolar border and hard palate, which, when used as a fulcrum to dislodge the growth, showed manifest weakness. On the surface of the tumour were tufts of hard, adherent tissue, resembling the lining of an alveolus; a large number of smaller masses, to the number of fifty or more—as a few were lost during the operation—some of them tooth-shaped, were

* "Résection partielle de l'os maxillaire supérieur pour l'extraction de polypes volumineux des fosses nasales, du pharynx et du sinus maxillaire," par M. Vallet d'Orléans. See *Gazette des hôpitaux*, March 31, 1859.

found sequestered in various parts of the surrounding bone under the orbit, and as far back as the tuberosity. They were, however, gouged out thoroughly and easily. The growth had invaded and dilated the whole antrum, leaving no vestige of its lining membrane. After a complete curettage of this large cavity it was carefully packed with iodoform gauze, and the soft parts neatly brought together by six points of suture, with a harelip pin passed through the upper lip, over which an antiseptic dressing was applied.

Outside of a slight attack of otitis which developed on the third day in the left ear, due to a nasal injection when the right nasal fossa was completely occluded, the case progressed rapidly towards recovery, and the patient was sent back home on March 23, since which time he has been attended by Dr. George W. Rembert, who, on May 14, kindly writes: "It has now been ten weeks since the operation, and the cavity is probably two-thirds filled." He thinks it will be necessary, later on, to adopt an obturator in connection with the dental plate. "The right corner of the mouth is slightly drawn backward and upward," adds the doctor, "and quite *likely* will increase *in the future*, but I do not anticipate any great disfigurement; on the contrary, considering all things, I accept it as fortunate indeed for the young man that it is not much greater. Should he, in after years, wear a moustache or beard, it will be next to impossible to detect the shortening of the right side of the face and the changes in the mouth that will *probably* follow."

Report of microscopical examination of the tumour, by Dr. W. C. Borden:

"The specimen received, and I beg to report that it is a compound follicular odontoma. It consists of hypertrophic tooth capsule which ossified in places (sporadically), producing a number of denticles which had originally probably all been bound together by periosteum, the denticles being embedded in the fibro-vascular structure, much as plums are in a plum pudding. The denticles consist entirely of cementum. A photo-micrograph of a ground-down slice of one shows a structure identical with that of cementum of teeth. This osseous structure is very hard and identical with that of the roots of a tooth. The denticles appeared so hard that before I made a section I thought they consisted of cementum, dentine and enamel, but they have neither of the latter histological structures. I notice that Sutton states that these denticles may consist of either cementum or dentine, or may even be ill-formed teeth, having all the structures of those organs. In this case the neoplastic centres developed in the fibro-vascular structure grew as cementum only, and did not progress as far as dentine or enamel formation, or rather, as enamel is of epiblastic origin odontomata of this type are probably hypertrophic growths from cementum centres. The tumour is a very interesting one."

If we accept J. Bland-Sutton's classification of odontoma, which, in my opinion, is more advanced and much more satisfactory than Broca's, this growth as removed and presented to you belongs to the division called by him a "compound follicular odontoma." In regard to these he writes in his last work on "Tumours, Innocent and Malignant" (1893), p. 36: "If the thickened capsule ossifies *sporadically* instead of *en masse*, a curious condition is brought about, for the tumour will then contain a number of small teeth or denticles, consist-

ing of *cementum* or *dentine* or even ill-shaped teeth composed of three dental elements, *cementum*, *dentine*, and *enamel*."

The number of teeth and denticles in such tumours varies greatly and may reach a total of three or four hundred. This last number, however, has never been found, to my knowledge, in the human subject. His citation concerning such numbers refers to a case in a horse, mentioned by Logan (*Jour. of Compar. Med. and Sur.*, New York, 1887), which contained four hundred denticles. He himself has reported the case of a compound follicular odontoma from a thar, which had affected both sides of the upper jaw, the denticles numbering in all three hundred. After careful researches on the subject I do not know of any case that can be compared, as to the number of denticles, to the one I to-day bring before you.

The case of Sims contained forty, the one of Tellander twenty-eight, and the one of Mathia's fifteen (all figured in Sutton's work).

Henry L. Albert and Hildebrand are quoted by Sutton as having reported a similar case, but referring to the original observations, I find no mention made of the number of denticles. Strange to say, the growth in almost every one of these five cases was located in the upper right maxilla. I know that Sutton, who was rather arbitrary several years ago in his assertions of the extreme rarity of the odontoma of the superior maxilla, as compared with those which develop in the lower jaw, has now modified his views, as more cases are published and a more thorough microscopical examination is made. The fact is that evidently before Broca, in his remarkable memoir, called the attention of surgeons to this subject, a great many cases described as fibrous tumours and exostoses of the antrum were nothing else but odontomata. Such cases are now very well defined by careful microscopical investigation, and shown to be neoplasms composed of dental tissues (*enamel*, *dentine* and *cementum*) in varying proportions and different degrees of development, arising from tooth germs, or teeth still in the process of growth, in fact, real odontomata. While unable to substantiate the statement on histological grounds, it is to be presumed that in this case what was described by Dr. Rembert as a fibrous growth and removed by him, without any reproduction since, was a fibrous odontoma in connection with the right central incisor, which was supposed to have been lost by premature dissolution of its fang, but which I am more inclined to believe had not erupted. If this view is taken, the location of this odontoma in the incisor region would be a real curiosity, as Professor von Metnitz, of Vienna, in describing a case of that kind, *believed it to be unique* (see abstract of case in the *British Journal of Dental Science*, 1891, vol. xxxiv., p. 211).

It is more difficult to explain why, as has been observed, these tumours should more generally affect the right upper and lower jaws. As to the growth which came under my observation for operation, it was undoubtedly connected with the canine tooth which had not erupted. Even that connection is very unusual, as Broca can only cite one case of odontoma developed in the canine region. As a rule the points of selection for these growths are the pre-molar and molar teeth, and in these last more particularly.

It is to be supposed that the two growths were independent and represented two distinct odontomata. Cases of double odontomata in the same subject are on record, but the growths do not generally

develop on the same side of the maxilla. In regard to the diagnosis, "It is a curious fact," says Sutton, "that up to this date there is no instance on record in which an odontoma, other than a follicular one (dentigerous cyst), has been diagnosed before operation." This assertion is too sweeping, as can be proved by the case of Panas and two or three others. It shows, however, how difficult is a positive diagnosis, especially when the growth remains embedded in the thickness of the maxillary bones.

The factor which must outweigh all other considerations in the mind of the surgeon is the one relating to the age at which the tumour makes its first appearance; it is pretty safe to assert that any neoplasm which presents itself in the maxillary bones after the completion of dental evolution, is not an odontoma. This consideration, coupled with the young age of the patient and the absence of one or more teeth, will assist materially in overcoming our doubts. It is most important, however, to arrive at a precise diagnosis, as the study relating to the literature of odontoma is very instructive, inasmuch as it shows that patients have in many instances been subjected to operations needlessly severe and dangerous.

Before proceeding to excise a portion of the mandible or maxilla the surgeon must satisfy himself that the tumour is not an odontoma; for this kind of growth generally requires only enucleation and vigorous gouging.

Although the result has been as satisfactory as possible in my case I now think that a more conservative procedure, through the mouth and canine fossa, might have been adopted with equally as good results.—*New York Medical Journal*, November 17, 1894.

The Relative Penetrating Power of Coagulants.

By JAMES TRUMAN, Philadelphia, Pa.

It has been clearly evident that the inner tubular portion, fibre of Tomes and Newmann sheaths, form no insignificant part of the organic matter of the tooth substance, and that death of the central organ means necessarily the death of the whole and subsequent decomposition of this tissue, or at least the central protoplasmic portion, the sheaths being almost indestructible. Hence the treatment of the pulp canal, however perfectly accomplished, must fail to reach the microscopic elements in the tubes, and the decomposition taking place therein results in the discolouration of the entire tooth and may act disastrously by septic emanations upon the vitality of the entire structure. The importance of this has not been lost sight of by intelligent operators, but the difficulties of manipulation have been serious. It has been plain that but two methods could be relied upon to overcome the difficulty—the property of coagulation and the diffusibility of various essential oils, aided by osmotic action. Both methods have had decided advocacy, and it is very probable that both have a positive value, the extent of which has as yet to be determined. For as far as I am aware, the relative values of the systems of treatment have not been settled with satisfactory experimentation, or, if so,

have not been divulged in the papers upon this subject. All the points defended by the writers seem almost entirely to be based on assumptions, imperfect experiments, or upon clinical observations.

The difficulties surrounding the subject, and the many errors of observation to which experimentation in this direction is liable, have led to criticism, and have thrown a shadow of doubt upon those made by several observers.

It is not the purpose of this article to show, if it be possible, that the arguments maintained with so much vigour and pertinacity, that coagulation furnishes its own barrier to diffusion, is an error of observation and to demonstrate that the various coagulants have relative degrees of value.

My intention was to endeavour to show that coagulants would penetrate tubes of the minutest character possible to be handled satisfactorily, and that this penetration was independent of circulation. My earlier investigations seemed to warrant this belief. Diffusion is recognised in the living tooth as performing an important and continuous part of its nutrition. It seemed certain, as the tubulated portion of the dentine invariably imbibed finely divided coloured matter in solution, that therefore it must take up any other fluid, if of equal solubility, with the same facility. This beyond question is true, the main difficulty here being to demonstrate that the coagulation was continuous without the aid of diffusion.

The earlier experiments abundantly proved this to be true, but they were carried on at the time with difficulty.

The effort was, as before stated, to find results in tubes not exceeding a millimetre in diameter, and if coagulation occurred it must be through absolute contact of the agent with the albumen or gelatine used in the experiment. It was necessary to fill the minute tubes with the albumen and then seal the ends. Both processes were accomplished readily by nearly filling the tubes and then quickly melting the ends in a Bunsen burner. This proved entirely satisfactory. It was found, however, that the albumen in the tubes dried and contracted upon itself, leaving spaces. To meet this difficulty, the albumen was combined with 20 per cent. of glycerine. This served an excellent purpose, and proved no interference with coagulation either in large or small tubes, with all the agents known to be positive coagulants, with one exception. It was found that mercuric chloride had little or no effect apparently on albumen and glycerine. This was repeated a number of times. It was then applied to albumen without glycerine, and coagulation was immediate. It was found, however, that glycerine simply delayed coagulation, for in the course of a few days the effect of the mercuric chloride was plainly visible in flocculent masses. This fact necessitated a repetition of all the experiments to determine their correctness.

These experiments have occupied several months, and constantly repeated. The tubes were drawn to varying lengths, not exceeding, as a rule, over 0.5 millimetre in diameter. The unit of time was fixed at ten days. The first series exhibited some variation in the number of centimetres; but, as the measurements of the fluids had not been exact, it was determined to try the most important coagulants a number of times with greater accuracy. This gave more satisfactory results. Whenever possible, the effort was made to have coagulation proceed in opposition to gravity.

What does the work as a whole teach? (1) That coagulants do not prevent by their own action the diffusion throughout the entire tube; (2) that the penetrating power of such agents as creasote, carbolic acid, and zinc chloride, those most frequently used, varies materially. That creasote is a very poor coagulant when compared with carbolic acid, and the latter, for this purpose, is not to be compared with zinc chloride or silver nitrate; (3) that in proportion to the coagulating power of the agent will be its penetrating force independent of gravitation.

Creolin gives but slight coagulating effect, oil of cloves about the same, carvocol shows slight cloudiness, sanitas oil slight coagulation, mercuric chloride no coagulation in this tube (glycerine and albumen). Tannic acid shows extended coagulation; oil of cinnamon, action marked but limited; oil of cajuput, no result; caustic potash no result in this or other tubes; zinc chloride in gelatine, no result; phenol sodique, partial coagulation. An attempt was made to carry staining with the coagulation. Zinc chloride was coloured with carmine, with the result that the coagulation left the stain and proceeded down the tube. Eugenol is but a poor coagulator; on thymol the effect is but slight and not continuous.

The oxychloride, of the same consistency used in filling pulp canals was placed in the funnel portion of the small tube. It soon hardened, but the coagulating process was marked upon the albumen. It began immediately, and has continued without interruption to the present time. The line of demarcation between the oxychloride and the coagulation is distinctly shown. This, probably, is one of the most satisfactory of the tests, as it abundantly proves that contact with albumen is all that is necessary to produce coagulation with zinc chloride, and if this be possible out of the mouth, how much greater must it be under more favourable conditions in the tooth.

Caustic potash was experimented upon not as a coagulant, but to observe the effect on albumen and gelatine. Though several tests were made no visible results were produced, though this does not antagonise the recognised quality of this agent as one of the most deeply penetrating and uncontrollable caustics used on the tissues.

The action of nitrate of silver in repeated tests was rather a surprise. It has generally been regarded as a superficial coagulant, but in every instance it has proved deeply penetrating and coagulating with rapidity and certainty, very nearly equal to zinc chloride. The fact assumes some importance in connection with the use of this agent in teeth. It seems as though a risk equal to that assumed in the use of zinc chloride is taken when placed in children's teeth for the prevention of caries.

The experiments were extended to the penetration of the tooth structure by a number of coagulating agents. A large number of teeth were kept under the action of these, the pulp canals being first slightly enlarged and filled with the agent daily. The result has not been entirely satisfactory; microscopic examination shows decided action throughout the dentinal tubes, in several sections being nearly obliterated and indicated only by fine lines; but while this demonstrates a positive change in the organic contents of the tubes, it does not absolutely show that this has been caused by the coagulation. Thus far I have been unable to carry the stain given the agent alone with the coagulation. Silver nitrate in several sections penetrated

seven days two-thirds the length of the tubes, but the extreme discolouration made it impossible to follow the individual tubes except at the extreme limit of colouration. Tests were made with a variety of stains, but with no result, the coagulation invariably separating from the stain. When the colour can be carried along with the coagulation, it will visually show what may be regarded as absolutely true, that the coagulant is carried in the dentinal tubes as effectually as in those exhibited.

In the specimens prepared for the microscope, the evidence is positive to the trained eye that every tube is filled with coagulated organic matter; and this has been so frequently repeated, and with precisely the same results, that I have no hesitation in accepting it as a fact. I failed, however, to observe any change in the cementum, and I am, therefore, led to doubt the possibility of any coagulating effect in that tissue by any of the agents used.—*Dental Cosmos*.

Preparations of Blood-Serum as Dressings for Wounds.

THE wonderful progress in surgery which has taken place within the past half-century owes its origin to a better knowledge of the nature of infective processes. It is known that even deep and complicated wounds heal readily if the affected parts can be kept at rest and free from bacteria. The drainage-tube which did such good service in giving an exit to the irritating and poisonous products of bacteria has now been largely discarded in the treatment of clean wounds, and useful industry has produced a wonderful variety of excellent materials for surgical dressings. Where the wound is made by the surgeon the surface of the skin can be cleansed and the instruments sterilised before the incision is made, and dressings of vegetable fibre, rendered sterile by heat, are to a large extent replacing dressings which have been impregnated with sal-alembroth or other germicides. But, for accidental wounds and septic cavities, antiseptic surgery must ever hold its own, and it is to be hoped that before the rising generation has attained years of responsibility, the disastrous use of the linseed poultice to cuts and other common injuries of the surface will have been relinquished, even by the million, in favour of, say, carbolic acid lotion.

Seeing that the method of the treatment of wounds and sores is of such paramount importance, and that dressings are continually being modified and improved, it behoves pharmacists to follow every new development in surgical therapeutics, in order to know what to keep ready for the use of medical men and for sudden emergency. In the November number of the "*Therapeutische Monatshefte*," Dr. Schleich describes certain dressings for aseptic wounds, and media for the application of drugs to the skin and accessible mucous surfaces. The author reminds us that absolute asepsis is hardly attainable in any wound, and that on the cells of the incised tissue healthy repair ultimately depends. Therefore the surface of the dressing next the wound should not be injurious to the living cells in contact with it. For this purpose Schleich has prepared a powder of dried and

sterilised serum of ox-blood. After cleansing the surface of wound, graze, eczematous patch, or clean ulcer, this powder is dusted on and it dries in the air to a crust. The powder for septic wounds can be obtained mixed with boric acid, iodoform, &c.

It would seem that the medicated powder might be the more useful, for it would be extremely difficult to keep the simple preparation aseptic when once the packet had been opened and dust and damp had obtained access to it. A more extended applicability may perhaps be found for another modification of the serum-powder. This is a paste (*Pasta Serosa*, *Schleich*) made with the sterile powder mixed with wax and zinc oxide and freed from water. It is described as having the consistency of honey. It is said to spread readily with a brush over diseased surfaces, where it rapidly sets to an elastic film. The paste can be made the vehicle of drugs, such as ichthyol, chrysarobin, resorcin, lysol, &c. The paste is said to mix with mercury in every proportion, and also with watery solutions of sal ammoniac. Thus it appears the preparation may have an extensive usefulness in dermatological practice.

A third preparation is *Schleich's Pasta Peptonata*. This is made with *Adamkiewicz's* peptone, added to wax, gum, oxide of zinc, and starch. The author uses this as a means of applying gauze dressing to wounds, &c., of the scalp, neck, buttocks, &c., where bandages do not sit well. A ring of the paste is painted around the wound, and a circle of gauze is cut out and pressed on the wound and the ring of paste. The latter sets firmly in five to ten minutes. To change the dressing, the gauze is cut just inside the ring of adhesive paste, a fresh ring painted over the old one, and a new disc of gauze applied. When the wound has healed the paste can be washed off, as it dissolves readily in water. This paste can be used mixed with iodoform, and the author claims for it an advantage over collodion in that it does not contract and crumple the skin, and that it can be used as an application to moist surfaces.—*Pharmaceutical Journal*.

Wax and its Impurities.

BY B. S. PROCTOR.

IN view of the repeated instances in which tradesmen have suffered from annoyance, if nothing worse, from its being found that wax which they have sold has not been pure beeswax, it is well that pharmacists should again have their attention drawn to the facility with which they can put a sample to two of the most important tests.

A sample of beeswax, white or yellow, should sink if thrown in a B.P. solution of ammonia, '959 sp. gr. When first immersed it is liable to have air bubbles attached, which bring it to the surface, but if rubbed with the solution and immersed again it will if pure go to the bottom.

The B.P. gives the sp. gr. of wax as '950 to '970. In *Watson's Dictionary of Chemistry*, 1894, the gravity is given as '965. In the *Pharmaceutical Journal*, March, 1887, *Dieterich* says it should be '963 to '964. My own observation, from clear honeycomb melted

down, agrees with these latter figures, and I think the Pharmacopœia allows more latitude than necessary. If it be desired to take the exact gravity of a specimen which does not correspond closely with that of the solution of ammonia, it is very conveniently done by adding a little water, or a little strong solution of ammonia (880) till the gravity of the solution and the fragment coincide, and then determine that of the liquor with the specific gravity bottle.

Of course a correct density does not prove that the wax is pure, but it is fair evidence that there is no large admixture of paraffin wax, the most probable adulterant.

The next most important characteristic is the tough plasticity which a fragment shows with the warmth of the hand; it is best observed by rolling 2 or 3 grains like a pill between the finger and thumb, then with strong pressure drawing the finger from the tip of the thumb towards the joint. Under this treatment, good wax should curl up towards the tip of the moving finger, while adulterated samples usually spread like salve on the ball of the thumb, or crumble with the friction.

I do not bring these forward now as novelties, for I have elsewhere drawn attention to them, nor as superseding more elaborate examination, but simply as having value at the moment from the readiness with which they can be applied.—*The Pharmaceutical Journal and Transactions*.

Perforating Disease in the Mouth.

BOUDET (*Arch. Gén. de Méd.*, January, 1895) draws attention to the progressive absorption of the alveolar arches, with falling out of healthy teeth, usually occurring in men about 40 years of age, without pain; later perforations of the palate into adjacent cavities without any signs of cicatrisation may appear. The sensation of the mucous membrane and also of the face will mostly be found to be impaired in regard to touch, pain and temperature. But this lesion of the trigeminus varies in different individuals. The voice may be altered and swallowing inconvenienced by the perforations. Exceptionally hæmorrhages, suppuration, and formation of sequestra are noted. Sometimes a neuralgia of the trigeminus has been observed. This neuralgia or neuritis may be accompanied by trophic changes. That the disease is of tabetic nature is the most probable explanation, but more evidence is still needed. The author gives details of reported cases arranged as follows: tabetics (1) with spontaneous falling out of the teeth; (2) with falling out of the teeth and absorption of the alveolar arches; and (3) with the formation of (a) a sinus or (b) a perforation in addition to the above. He then discusses the cause of these lesions in *tabes dorsalis*, and holds the view that they are due to disease of the nucleus of the fifth nerve, or the fifth nerve itself. Other maladies, such as diabetes or general paralysis, might involve the trigeminus, but no such instance has been recorded.—*The British Medical Journal*.

A Method of Making Steel Crown Dies.

By FRANK B. NORRIS.

THE making of steel crown dies and the use of a block of wood as a counter die, has not, to my knowledge, appeared in any of the dental journals.

To make a steel die that will never wear out, procure a piece of round stuff, half-inch for molars, three-eighths for bicuspid. Take them to a blacksmith and have them cut into as many three-inch pieces as you want dies. Each piece is then heated to redness and one end driven into the crown die plate, which will give a steel cameo of the cusps and sulci complete. The dies are afterwards placed in a vice and filed to any shape or size desired, being careful not to get the neck smaller than the crown.

For either the steel or fusible metal dies, a block of close-grained pine or spruce is all that is necessary for a counter. By driving the die into the end of the block you have as fine a counter as one could wish. A little oil placed in the counter will prevent crown from sticking.

A draw-plate is very handy with these dies, but is not necessary, as a piece of plate may be drawn down into shape over a series of hard wood mandrels, driven carefully into different sized holes in the block.

—*Items of Interest.*

OBITUARY.

John Whitaker Hulke, F.R.S.

WE regret to record the death of Mr. J. W. Hulke, which took place February 19, from broncho-pneumonia, supervening on influenza. This distinguished and learned surgeon was born at Deal, 1830, and educated at King's College School. He also received his medical education at King's College.

In 1855 he volunteered for service in the Crimea, and was for a time assistant-surgeon to the British Civil Hospital at Smyrna. On returning to London in 1857, he became assistant-surgeon to the Royal London Ophthalmic Hospital, Moorfields, and in 1862 assistant-surgeon to the Middlesex Hospital and full surgeon in 1870. In the early part of his career at this hospital he lectured on Physics, and later on Surgery.

Mr. Hulke had a very distinguished career, as the following record shows:—

In 1867 he became a Fellow of the Royal Society, and eventually served on the Council; at the Royal College of Surgeons, in 1859, he was awarded the Jacksonian Prize; in 1868, 1869, 1870, he was Arris and Gale Lecturer, and in 1880 joined the Board of Examiners, becoming a Member of Council in 1881, Vice-president 1888, and President 1893, which office he occupied at the time of his death. He was Bradshaw Lecturer in 1891, and appointed to deliver the Hunterian Oration of 1895.

Mr. Hulke was an original Fellow of the Clinical Society, and at the time of his death occupied the post of President. He had also filled the Presidential Chair of the Pathological and Geological Societies.

Mr. Hulke made many contributions to the *Transactions* of the Royal Medico-Chirurgical, the Pathological and Clinical Societies. His papers to the Royal Society were on the "Minute Anatomy of the Retina," and on the "Extinct Dinosaurs." His Jacksonian Essay, "On the Use of the Ophthalmoscope," is well known. He contributed cases to the *Lancet* as recently as 1895, and his Bradshaw Lecture, "On Fractures and Dislocations of the Vertebral Column," appeared in pamphlet form.

Mr. Hulke was a painstaking, cautious surgeon, an admirable teacher; punctual, industrious and conscientious himself, he was intolerant of those who lacked these qualities. As an examiner he was austere, but strictly just and impartial. That his goodness was deeply appreciated, the memorial service in St. James's Church, Piccadilly, bore ample witness, the leading physicians and surgeons of London attending to testify their respect to the memory of this exceptional man.

Sir William Scovell Savory, Bart., F.R.S.

By the death of Sir William Scovell Savory surgery has lost one of its most scientific exponents. He was born on November 30, 1826, and received his early education at a private school at Ramsgate, entering upon his medical career at St. Bartholomew's Hospital immediately after leaving school. He qualified in 1847 by becoming a member of the

Royal College of Surgeons, and was shortly afterwards appointed house surgeon to Sir William Lawrence, a person whom he always regarded as the ideal of a gentleman and a surgeon. In April, 1861, he was appointed assistant surgeon to St. Bartholomew's Hospital, becoming full surgeon in 1867 on the retirement of Mr. Wormald, and finally retired from the active staff in 1891. He held several teaching appointments at the hospital, being successively Demonstrator of Anatomy, Demonstrator and Lecturer on Physiology, and Lecturer on Surgery. Sir William Savory's connection with the Royal College of Surgeons commenced in 1870, and he filled the important office of President when the Queen laid the foundation stone of the Examination Hall. In the year 1890 he received the honour of a baronetcy.

His illness was of short duration, for it was not until Thursday, February 21, that he complained of not feeling well, and consulted Dr. Habershon, who took him on the next day to see Dr. Pavy. Some slight improvement was manifest until the 28th, on which day he visited St. Bartholomew's Hospital. There were several cases of influenza in the house, and on the morning of March 1 his temperature, which was subnormal on the previous day, was found to be elevated, though beyond a slight bronchial catarrh none of the specific symptoms of influenza were present. Sir William Savory was, however, kept to his room, and on the following day symptoms of bronchitis supervened, though at no time severe, and his strength was well maintained until the afternoon of Sunday, the 3rd inst., when for the first time signs of prostration and cardiac failure appeared. At night there was a decided rally, with improved pulse and lower temperature. During the early hours of Monday morning, the 4th inst., the temperature again rose, sudden and profound collapse set in, and in spite of all that the most active stimulation and the most assiduous care could do, he sank at 10.30 a.m. During his illness he was under the care of Dr. Pavy and Dr. Habershon, and was nursed by his daughter-in-law and Sister John from St. Bartholomew's Hospital.

Sir William Savory married in 1854, on his birthday, the daughter of William Borradaile. She died in 1868. By her he had one son, who succeeds him in the title and is incumbent of St. Bartholomew the Great, Smithfield.

A memorial service was held on Thursday, the 7th, in St. George's, Hanover Square, at 1.30 p.m., and the interment took place in Highgate Cemetery on the same day.

MISCELLANEA.

XEROSTOMA WITH RECURRING SYMMETRICAL PAROTITIS.—Last month's issue contained a short note of a case of xerostoma shown at the Clinical Society of Manchester. Since then another example of this comparatively rare affection has been recorded in the columns of the *Medical Week*. The patient, who was under the care of Mr. Battle, was 54 years of age, and had suffered previous to being seen for five years from dry tongue, while the parotitis had been in existence on and off for two years, recurring equally on both sides about every two or four weeks. The tongue and mucous membrane of the cheeks were dry and smooth, the glands as well as the epithelial surface being atrophied. The swelling of the parotids was painless, and the skin covering them unaffected. The condition of xerostoma began about the age of 49, at which time the menopause occurred rather abruptly. After admission to hospital the patient made fair improvement, the treatment consisting in the administration of a saline mixture.

THE PRESENCE OF NUCLEATED RED CORPUSCLES IN BLOOD AFTER HÆMORRHAGE.—A short account of some interesting experiments by Zenoni in the presence of nucleated red corpuscles in blood is given in the *British Medical Journal* for February 16. "The experiments were carried out principally on dogs, guinea pigs, and rabbits, in whose blood he had previously satisfied himself that there were no circulating nucleated red blood corpuscles. He chose a dog weighing 6.700 kilog., and in ten repeated operations withdrew from it a total of 1.830 c.cm. of its blood; then, after defibrinating the blood, he re-injected it into the circulation,

and in an hour and a half after the operation noticed the appearance of nucleated red corpuscles in the circulating blood on examining a specimen under the microscope. In two other dogs similarly treated the appearances of these corpuscles in the circulating blood took place five hours and a half and seven hours and a half after the operation. In another dog, two rabbits, and four guinea pigs, in whom a moderate amount of blood was withdrawn at a single operation, the appearance of nucleated red corpuscles occurred between eighteen and forty-eight hours after the operation. Zenoni thinks that the rapid appearance of these corpuscles is due to the mechanical effect produced by the withdrawal of blood, for after repeated bleedings they appear too soon for their reappearance to be due to a hæmatopoietic reaction; moreover, eight or nine days afterwards, they are no longer noticed, exactly when the hæmatopoietic reaction is at its maximum. He further thinks that after loss of blood these corpuscles are mechanically drawn into the circulation from their normal site, the bone marrow; that a certain number of them get stopped in the spleen, proliferate there, and give to the spleen that foetal hæmatopoietic function which has been ascribed to it by Bizzozzero as taking place after hæmorrhages."

HEMIATROPHY OF THE FACE AND UPPER EXTREMITY, WITH FACIAL PARALYSIS ON THE SAME SIDE.—A unique case of this affection was shown at a meeting of the Medical Society of the Hospitals of Paris, on February 22, by Drs. Marie and Marinesco. The patient under observation was a male, 45 years of age, and presented marked atrophy of the left side of the face and upper limb, including the scapula and left half of the thorax. The atrophy was associated with complete paralysis of the left facial nerve, the orbicularis palpebrarum being comparatively unaffected. In addition, the upper left eyelid somewhat drooped, the movements of abduction and elevation of the left eyeball being limited and accompanied by a certain degree of diplopia. The facial paralysis and atrophy of the face and limbs was said to have begun in childhood at about 11 years of age, without recognisable cause. The bones also shared in the atrophy of the various regions, more particularly

the inferior maxilla, but the skin was not changed either in respect of thickness, colour, or consistency. In the upper limb the atrophy was more marked at the upper than at the lower part, the left hand, though somewhat smaller than the right, being so nearly normal that comparison with the right hand was necessary to affirm the atrophy. The atrophy of the scapula, arm, and even upper portion of the forearm, on the other hand, was very striking. In an extensive search of medical literature the authors have been unable to find a single similar case, and they inclined to the belief that the phenomena presented by the patient were due to changes in the domain of the great sympathetic, although they were unable to express an opinion as to the exact nature of this change, or as to the mechanism by which the facial paralysis had been brought about.

ADENOMA OF THE LIP.—At a recent meeting of the Pathological Society Mr. Dunn showed a specimen of adenoma of the lip which he had removed from a young adult. The tumour had existed during the greater part of the patient's life, and showed microscopically a large quantity of fibrous tissue, with numerous spaces lined with one or two layers of epithelium. The swelling was firm, elastic, encapsuled and shelled out easily on being removed.

A NEW ALLOY AS A SUBSTITUTE FOR GOLD.—The *Journal de l'Horlogerie* states that an alloy has been discovered which is a wonderful substitute for gold, its composition being copper nine parts, antimony six parts. The copper is first melted and the antimony then added; when thoroughly fused together a small quantity of magnesium and carbonate of lime are added to increase the density of the metal. The product can be drawn, wrought, soldered, just like gold, and on being polished almost exactly resembles it. Exposure to ammoniacal salts or nitrous vapours has no apparent effect upon the alloy.

THE DENTAL HOSPITAL OF LONDON TEACHING MUSEUM.—Mr. Fletcher of Warrington has generously contributed to the New Teaching Museum in the process of formation in connection with the Dental Hospital of London, a case of specimens illustrating metal casting in its various aspects. The case is an interesting and valuable one, and Mr. Fletcher upon another page gives an account of the various specimens. It is needless to say that any donations of interesting teaching specimens will be gratefully accepted by the authorities of the School.

THE following new donations have been received for the building account of the new Dental Hospital of London, Leicester Square, since the last list published in the Journal:—

	£	s.	d.		£	s.	d.
H. D. Curtis, Esq.	2	2	0	Under £1	1	0	0
Col. F. R. Waldo Sibthorp	10	10	0	Arthur Johnston, Esq. ...	1	1	0
Walter Perks, Esq.				A. T. Hilder, Esq.	1	1	0
(additional)	5	5	0	W. W. Gabell, Esq.			
H. G.	2	2	0	(additional)	1	1	0
Miss Gaitskell	4	0	0	Dyers' Company (additional)	2	2	0
W. L. Croll, Esq.	1	1	0	Mrs. J. Sharman-Francey	1	1	0
Mrs. Arthur Brown	2	2	0	Leathersellers' Company			
Mrs. B. T. Hodgson	1	1	0	(additional)	10	10	0
Messrs. Rothschild & Co. (additional)	21	0	0	Miss Nisbet	1	1	0
Mrs. W. T. Lister	1	1	0	Admiral Sir W. F. Martin, K.C.B.	10	10	0
Donation Box at Hospital	2	15	3	Miss Maudsley	1	1	0
M. B.	1	1	0	Mrs. Roberts	1	1	0
A Friend	21	0	0	R. C. Poulter, Esq.	1	1	0
Mrs. Henry Cazenove	10	10	0	Walter S. Nowill, Esq.	1	1	0
Mrs. H. H. Murdoch	1	1	0	Mrs. Kent (per Miss Mary Smale's Collecting Card)	5	5	0
Dr. Travers	1	1	0	Miss Davis	2	2	0
Miss Conant	1	0	0	Edward Yorke, Esq.	5	0	0
Earl of Airlie, K.T.	5	5	0	Mrs. Wilson	1	1	0
W. R. Ackland, Esq.	10	10	0	Fredk. Breese, Esq.	2	2	0
Mrs. Alexander	1	1	0	Dr. H. Forster Morley ...	10	10	0
R. W. K. Roscoe, Esq.	1	1	0				

EDINBURGH DENTAL STUDENTS' SOCIETY.—The last meeting of the Session was held on the evening of March 4, in the Board Room of the Dental Hospital. Mr. Simmons, L.D.S., the President, occupied the chair. After the minutes of the previous meeting had been read and approved of, Mr. T. R. D. Walkinshaw read an able and interesting paper on "The Position of L.D.S. *v.* the Unqualified Practitioner." He was followed by Messrs. Lindsay, J. W. E. Stewart, C. Wood, Swales, Dickson, Watson and Simmons. The Treasurer intimated that there was a balance in hand of £14 19s. 6½d., there being, however, still some expenses to be met. The following office-bearers for Session 1894-95 were appointed:—Honorary President, Dr. Macdonald Brown; President, Mr. J. Malcolm; Vice-presidents, Mr. R. Lindsay, Mr. Murray Thomson; Secretary, Mr. T. R. D. Walkinshaw; Treasurer, Mr. Morris Stewart. Council: Messrs. Simmons, Shennan, C. E. Page, Friend, Routledge. Messrs. C. Wood and J. O. Stewart were appointed Auditors. Mr. Simmons delivered an interesting valedictory address, alluding in the course of his remarks to the history of the Edinburgh Dental Students' Society and Dental Hospital and School.

DENTAL HOSPITAL OF IRELAND.—The following is the list of officers for the year 1895:—Consulting Dental Surgeons: R. H. Moore, F.R.C.S.I., Daniel Corbett, M.R.C.S.E., W. Booth Pearsall, F.R.C.S.I. Dental Surgeons: Robert Hazelton, F.R.C.S.I., R. Theodore Stack, M.D., F.R.C.S.I., D.M.D. Harv., L.D.S. Eng., A. W. W. Baker, M.D., F.R.C.S.I., L.D.S.I., Daniel Corbett, jun., A.B., F.R.C.S.I., George Wycliff Yeates, M.B., Ch.M., L.D.S.I., George M. P. Murray, F.R.C.S.I., Joseph S. Thomson, L.D.S. Edin. Assistant Dental Surgeons: Shenstone Bishop, L.D.S.I., Kevin E. O'Duffy, L.D.S. Edin., Vincent Doyle, L.D.S.I., George P. Moore, M.B., B.Ch.D.U., L.D.S. Anæsthetists: John G. Cronyn, L.R.C.S.I., L.K.Q.C.P.I., William R. Graves, M.D., James B. Coleman, M.D., M.S.R.U.I. Hon. Sec.: G. M. P. Murray. Registrar: William A. Shea.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—The next meeting of this Society will be held on Monday, April when a paper will be read by Mr. G. G. Campion entitled "Studies in Superior Protrusion." Mr. G. Brunton will also contribute casual communications on "A Hodge right-angle hand piece altered to adapt it for use in close bites and difficult positions," and "A new amalgam balance made of one piece."

LIST OF MEMBERS—AN OMISSION.—The hon. sec. of the Association asks us to state that the name of Mr. J. H. Carter, L.D.S.I., of 26, Park Square, Leeds, was omitted by mistake from the List of Members recently published.

ERRATUM.—In the auditor's letter, explanatory of the 1893 Balance Sheet of the British Dental Association, printed on page 71 of our last issue, two printer's errors occur. The loss on the Journal for 1894 is £44, as against £178 (not £78) in 1893. The free distribution of Journals for April and September, 1894, was 170 and 171 respectively, not 70 and 71.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

The Art of Casting and Working Sheet Metal.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION"

SIR,—I have had the pleasure of making a representative collection for the London Dental School of specimens of casting in iron, brass, bronze, tin alloys, and type metal: showing the various methods of coring undercuts, two to five part moulding, casting in metal moulds and hammered work from the flat, with graver and punch work. Some of the examples are unique, and have been taken from my own private collection, much to the annoyance of the "powers that be" at home, who object to it being reduced. Those members of the British Dental Association who were at the meeting in Warrington

will no doubt remember seeing this, and it has been suggested that a similar collection would be valuable in every dental educational centre. I shall be pleased to present a similar set, with the full description of the methods by which the results are obtained, to any English or foreign dental schools, which are prepared to provide a suitable case for their exhibition and examination. The case for the London set was made by Messrs. Garnett & Sons, of Warrington, who fully understand this class of work, but of course, as regards schools abroad, it will be cheaper to obtain these on the spot. To those who wish for this collection it must be remembered that it is a work of time, suitable examples are not to be obtained at a day's notice, and the London collection required over four months to complete, not allowing for my own specimens, which could only be obtained by accident. To those who can see the London collection, I may call special attention to one minute casting in iron by Devaranne, of Berlin, showing the method of casting the finest filagree work. Like Michael Angelo, Devaranne is dead, and has not left his "business" to any one, his work is unique and "uncommercial;" so far as I am aware they are not to be purchased at any price, except when odd examples come into the market by accident.

Grappenhall, Warrington.

THOS. FLETCHER.

Worms in Teeth.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—The account of Chinese dentistry in the JOURNAL OF THE BRITISH DENTAL ASSOCIATION for January is interesting, as showing how that conservative people are at least 600 years behind the age. I possess a book full of medical prescriptions of about the date 1350, from which I make the two following extracts :—

"*Si vermes corrodunt dentes.*—Take the sed of hennebane and the sed of lekys [leeks] and recheles [auricula] and do these three thynges up on an hot glowying tilston and make a pipe that hath a wyd hende and hold hit on to the smoke that hit may rouse [rush ?] thorwe [through] the pipe into thy teyth and hit schal sle [slay] the wormes and do a wey the ache."

"*Pro vermicibus in dentibus.*—Take the sed of henebane and red purmele [?] of the heth and virgine wax and recheles and make a candel there of and hold thy mouthe over the candel that hete and the smoke may come to thy teth and do so ofte.—*Videbis vermes cadere de dentibus.*"

John Gerarde, who published his "Herball" in 1597, writes as follows in discussing the virtues of "henbane, or English tobacco :"—

"The roote boyled in vineger and the same holden hot in the mouth, easeth the paine of the teeth. The seede is vsed of mountibancke toothdrawers which runne about the countrey, for to cause woormes come forth of mens teeth by burning it in a chafing dish with coles, the partie holding his mouth ouer the fume thereof; but some craftie companions to gaine money conuey small lute strings into the water, perswading the patient that those small creeping beasts came out of his mouth or other parts, which he intended to ease."

Yours, &c.,

GEORGE HENSLOW.

The "Medical Acts Amendment Bill."

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—At a meeting of the Council of the Midland Branch, held at Bradford on Saturday, February 23, a discussion arose on the "Medical Acts Amendment Bill," when a resolution was passed, "That the Editor of the Association Journal be requested to print the proposed 'Amendments' in the next number, in order that members may have the opportunity of studying them." It was stated that the members of the Representative Board who have been deputed by the Board to see that the interests of dentists were secured in the Bill had been unable to succeed in their mission, and it was proposed that a committee be formed to look after dental interests. It was, however, thought that members should be in possession of the terms of the Bill in order that they may carefully study them first, therefore the appointment of a committee was deferred until the members should have an opportunity of considering the "amendments."

A draft of the proposed amendments appears in the *British Medical Journal* for January 12, last, from a perusal of which it appears to me that if the words "or dentistry or dental-surgery" were inserted after the words "or any branch of medicine and surgery" in paragraph 2 of clause 3, we should then have the power of overcoming the difficulties which at present surround us in dealing with charlatanism in its varied forms.

But, sir, if the powers that be will not accede to our desires for recognition and our right to protection, it is our duty to try to bring a little more than "moral suasion" to bear upon the question.

It is still fresh to the minds of most of us that when our own "Bill" was being drafted we could not have our own sweet wills unchallenged, as we were compelled by the force of circumstances to admit the large army of pharmacists who practised dentistry in any shape or form; nor can we forget the celebrated Mundella clause, by virtue of which

more men were admitted to the Dentists' Register from 1880 to 1890 than were admitted by virtue of examination.

Are we to tamely submit to the dictation of those who have the Bill in hand, or are we to rouse ourselves and devise ways and means to obtain that which we desire so much? Is it not possible for Members of Parliament to be approached who may be induced to interest themselves on our behalf, and, Mundella like, threaten to *block* the Bill unless the concession which we seek shall be granted?

I would urge the members of the Association to waken up, and the Branches to particularly discuss this important question, uniting with the Representative Board in its endeavours to strengthen our position, by making our Dentists Act so complete that charlatanism and illicit practice shall be unable to exist.

Apologising for taking up so much of your valuable space,

I am, yours truly,

I. RENSRAW.

PROPOSED AMENDMENT OF THE MEDICAL ACT.

Clause 3, Draft Bill.

Definition of taking and using titles by persons and institutions.

III. For the purposes of this Act—

(1) The words "title, name, style, addition or description," include any title, addition to a name, designation or description, whether expressed in words or by letters, or partly in one way or partly in another.

(2) A person shall be deemed to take and use a title, name, style or description, who advertises, exhibits or holds out, or is party to the advertisement, exhibition, or holding out of any title, name or description of or concerning any institution, company, body, place, or premises whereby it is directly or indirectly expressed or implied that medicine or surgery, or any branch of medicine or surgery, *or dentistry or dental surgery* is practised there, or who carries on, or is a party to the carrying on, by or at any such institution, or under or in any connection with such institution, company, association, body, place, or premises, the practice of medicine, surgery or any branch of medicine or surgery *or dentistry or dental surgery*.

[The words in italics are additions of Mr. Renshaw's.—ED., J.B.D.A.]

BOOKS RECEIVED.

Transactions of the Students' Society of the Dental Hospital of London, The South Australian Register, L'Odontologie et la Revue Internationale d'Odontologie, The Medical Press and Circular, Guy's Hospital Gazette, The Dominion Dental Journal, The Pharmaceutical Journal, The Chemist and Druggist, Food and Sanitation, The Medical Review, The Dental Cosmos, The Ohio Dental Journal, Items of Interest, The British Journal of Dental Science, The Medical Pioneer, Correspondenzblatt für Zahnärzte, The Texas Dental Journal, The Students' Journal of the Liverpool Dental Hospital.

Letters and other Communications received from:—

G. Henslow, P. Crank, J. Bland Sutton, Ernest F. Gabell, Thomas Fletcher, J. E. Greaves, T. A. Goard, A. Shennan, W. Wallace, J. A. Lees, Sir Eizak Pitman, I. Renshaw.

APPOINTMENT.

J. E. GREAVES, L.D.S.I., to be Honorary Dental Surgeon to the Walmsley Orphanage, Leeds.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 4.

APRIL 15, 1895.

VOL. XVI.

The Balance Sheet.

THE anxieties of real life would be almost more than we could bear were it not for the delightful humours of balance sheets, that come every spring, as it seems, straight from fairyland, to make us feel like happy children once more. For a few brief hours we may forget the horrors of figures as we know them in the every-day dull world, and almost love them as they dance to the magic of the enchanter's wand on that mystic page. What wonders are there! We start with £400 on deposit, and £62 19s. 10d. in current account, while the watchful treasurer keeps £3 13s. 6d. for the unforeseen (do you suppose, gentle reader, that he would pay 2d. to the current account, and make it £63? why he would never dare to look an accountant in the face again). Well, armed with all this wealth, we start to wrestle with a deficit of £121 19s. 8d.

A year passes, the Journal saves £16 on reporting, and £179 by omitting to publish an extra issue, and is still obliged to confess to a deficit of £44 7s. 9d. The general account shows a surplus of £132 os. 11d., and the whole purse is £87 13s. 2d. to the good. What will the treasurer do with it? Will he pay that 2d. to the current account? He does more; he pays £200 more to deposit, more than £100 to current account (plus the 2d.), and keeps 1s. 4d. more himself for emergencies. This is more than economy—it is genius. At this moment a nasty cold doubt creeps through the writer's mind—what if he doesn't understand balance sheets, what if this one is really as simple and easy to follow as bimetallism, or a probate dispute, or any other subject that requires no technical knowledge. Perhaps a little caution would be as well, so we will turn from the consideration of this aspect of the subject with the heartfelt wish that after reading the above lines no reader will deny himself the pleasure of a careful study of this and past balance sheets, by his evening fireside.

Now let us consider what we are receiving for all this expenditure; and secondly, are we making quite the best possible use of what we do receive? We receive every spring with our February Journal a List of Members. Do we all look at or refer to them? We ought to do so, yet it is a strange coincidence that, though these annual publications contain, and have contained for some years, the lists of gentlemen serving on the "Business," "Publishing" and "Finance" Committees, the March number for 1895 contains a lament for the absence of such information on the part of a member of the Representative Board, and these lists show also that the same people do not form all three Committees. The moral surely requires no pointing.

Again, we hear from time to time that our reports are meagre. Now it would be well to understand the wishes

of the Association with regard to this point. To expand them at all would cost a great deal of money, because it would not give universal satisfaction to report elaborately in some cases and curtail in others, and as the new matter would require an increased staff for revising, increased postage and doubled printing bills (it would not be worth while to go over the postage for less than another 64 pp.), the attempt would probably cost another £800 to £900 a year. This might be met by doubling the subscription; but suppose the many of us who do not make speeches rebelled at paying an extra guinea for the glory of the few who do, and withdrew from the Association! Clearly those who wish it should pay the piper, and as would be only fair, the extra issue, with its joys and its sorrows, should be theirs to pay for, to read and to explain in beautiful balance sheets. We think the rest of us prefer the lighter burden, from every point of view. One more fact, and a pleasant one—we have carried through sixteen legal cases for a little more than £10 a-piece. This speaks volumes, both for our own executive and our kind and able legal advisers.

The Association v. Levey.

THE chief interest of the above case lies in the fact that it is the first summons brought in Ireland for contravention of the Dental Act. The defendant was not registered, and did "take and use the name or title of dentist." The defence was that though a technical offence had been committed, the defendant was, as a matter of fact, in practice before the passing of the Act, and therefore might have registered; that he was experienced, and, in fact, not the sort of man whom it was desired by the framers of the Act to exclude from practice. The fact of his being in

practice before 1878 was not admitted by the prosecution, and the defendant's counsel allowed that he could not prove it. The defence was held to be rather an aggravation of the offence than otherwise, and the defendant was fined five pounds and two guineas costs ; and this leniency may be attributed to the fact of the case being the first of its kind tried in Ireland. The next offender will probably meet with no mercy.

The Annual General Meeting.

ALTHOUGH the actual details of the Edinburgh meeting are going forward, they are at present not sufficiently complete to lay before the members. There can be little doubt that the meeting will prove a success, and it will be strange indeed if a large number are not present, for there are few more attractive and picturesque cities than the Scottish capital. The meeting occurs, too, at that time of the year when most are enjoying a well-earned rest, and what more attractive country than Scotland can be found for such a holiday, more especially as the meeting ends the last day in August, and September is considered one of the best months, the weather generally being of a settled character. The social head-quarters of the Association will be the Waterloo Hotel, which has in its Waterloo Chamber one of the finest dining-rooms in the kingdom. A special tariff as in past years will be arranged ; these details, however, will be announced in a subsequent issue.

PAPERS AND DEMONSTRATIONS.

MEMBERS wishing to read papers or give demonstrations at the annual meeting, are asked to send in their names to the Hon. Sec., 40, Leicester Square, London, W.C.

MICROSCOPICAL SECTION.

PRELIMINARY NOTICE.

President: J. HOWARD MUMMERY.*President-elect*: A. S. UNDERWOOD.

A FURTHER discussion on "The Pathology of the Dental Pulp" will take place at the Edinburgh meeting, and members generally are invited to give short communications in connection with this subject. Members desirous of reading papers, giving demonstrations, or exhibiting microscope slides and photo-micrographs, are requested to communicate with the President at 10, Cavendish Place, W.; or the Hon. Secretary, A. Hopewell Smith, Lindum House, Boston.

The Sir John and Lady Tomes' Golden Wedding-Gift Fund.

WE, the undersigned, appointed auditors of this Fund, beg to state that we have carefully examined all vouchers in connection therewith, and have certified that the full amount of £310 India three per cent. stock has been duly handed over to the Royal College of Surgeons of England to found the "John Tomes Prize." We have also much pleasure in stating that the entire working expenses in connection with the above Fund, and the cost of the portrait sent to each subscriber, have been defrayed by a few personal friends of Sir John Tomes.

F. CANTON,
WALTER H. COFFIN, } *Auditors.*

BOARD OF EXAMINERS IN DENTAL SURGERY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Messrs. J. McCarthy and Edmund Owen have been elected members of the Board of Examiners in Dental Surgery of the Royal College of Surgeons of England.

ASSOCIATION INTELLIGENCE.

Metropolitan Branch.

THE next meeting will be held on Wednesday, the 24th inst., at 40, Leicester Square, when communications have been promised by Messrs. J. H. Badcock, A. E. Baker, H. Baldwin, and L. Matheson.

SIDNEY SPOKES, *Hon. Sec.*

Western Counties Branch.

A MEETING of the Council of the Western Branch of the British Dental Association will be held at the Gloucester Hotel, Weymouth, on Saturday, April 27, at 3 p.m.

At 4 p.m., an informal meeting of the members will be held. Mr. Genge will show some models of an interesting case, and there will be other casual communications.

T. ARTHUR GOARD,

6, *Southernhay, Exeter.*

Hon. Sec.

Southern Counties Branch.

THE next meeting will be held in the Board Room of the General Dispensary, Queen's Road, Brighton, on Saturday, April 27, 1895.

2.15—Council Meeting. 3.30—Demonstrations: "A Method of Screwing on Crowns," by Ridley Herschell, L.D.S.Eng., "Gold Fillings in Approximal Cavities, using a Matrix," by T. H. Elliott, L.D.S.Glas., Microscopic Demonstrations: Mr. Caush, L.D.S.I., will show slides illustrating exostosis, alveolar abscess, enlargement of pulp canals, and cemental tissue in pulp canals in teeth of man and horse, and other demonstrations. A resolution referring to the proposed "Medical Acts Amendment Bill" will be moved by Mr. J. H. Redman, L.D.S.I., D.D.S. 6—Dinner at Messrs. Booth's restaurant, East Street, tickets 4s. 6d., applications for which should be made on or before April 24 to

FRANK V. RICHARDSON, *Hon. Sec.*

1, *Sillwood Road.*

Midland Branch.

THE Annual Meeting will be held in Hull, on Thursday, Friday and Saturday, June 20, 21 and 22. It is proposed to hold the Council Meeting on the Thursday evening (20th), and meantime other friends will have a smoking chit-chat in the hotel.

On Friday morning (21st) the Royal Infirmary Board have placed a vacant Ward at our disposal for demonstrations, and the use of the Board Room for the Annual Meeting.

At noon the members are invited to luncheon by the President-elect.

In the afternoon the Mayor of Hull has kindly placed the Banqueting Room at our service for the reading of papers. The Mayoress invites the members and friends to afternoon tea. The usual dinner will follow in the evening.

On Saturday morning an excursion—probably to Flamborough—is being arranged.

Full particulars next month. Papers and casual communications are invited.

I. RENSHAW, *Hon. Sec.*

Eastern Counties Branch.

THE Annual General Meeting will be held at Grimsby, on Saturday, June 22—President, Alex. Kirby, L.D.S.Eng.; President-elect, R. P. Lennox. Gentlemen willing to assist in any way at the meeting will oblige by communicating with the Hon. Secretary, or with the Chairman of the Local Committee, J. E. Husbands, Melbourne House, Town Hall Square, Great Grimsby.

3, Silver Street, Cambridge.

W. A. RHODES,
Hon. Sec.

Benevolent Fund.

LIST OF NEW SUBSCRIPTIONS AND DONATIONS (SINCE JULY 7, 1894).

Subscriptions.

1894.

Harrison, Walter, 6, Brunswick Place, Hove, Brighton									
(additional as promised, £1 rs. received for 1894)	...	£0	10	6					
Marsh, Wm., Pietermaritzburg	...	...	...	...	1	1	0		
Vice, W. Armston, Leicester	...	...	...	...	1	1	0		
Williams, Walter, The Wolds, College Road, Eastbourne									
(as promised)	...	...	...	...	...	1	1	0	

1895.

Alexander, M., 14, Rodney Street, Liverpool	...	...	1	1	0				
Barrett, Ashley, 42, Finsbury Square, E.C.	...	...	1	1	0				
Buckland, Sydney C., "Fairview," Wimbledon Park, S.W.	...	...	1	1	0				
"C. R. M."	...	...	...	...	...	1	1	0	
Canton, F. A., 34, Baker Street, Portman Square, W.	...	...	1	1	0				
Clegg, J. C., 52, Buck's Road, Douglas, Isle of Man	...	...	1	1	0				

Coffin, H. L., 94, Cornwall Gardens, S.W.	£1	1	0
Colyer, H. O., Denbigh House, Ryde, Isle of Wight ...	1	1	0
Curtis, C. J., North Pallant, Chichester	1	1	0
Ellwood, F. H., Granville House, Redhill	0	10	6
Fentiman & Co., 2, Upper East Smithfield, E.C. ...	1	0	0
Field, Dr. Geo. W., 23, Park Street, Park Lane, W. ...	1	1	0
Fisher, William, 9, Lowther Street, Kendal	0	10	6
Gartley, A. L., 25, South Mall, Cork	1	1	0
Goddard, H. Ernest, Oxford Street, Nottingham ...	0	10	6
Grayston, Wm. Cass, 1, Pavilion Terrace, Scarborough ...	1	1	0
Hall, Edward C. J., 18, Orchard Street, W.	1	1	0
Hall, T. S. Muspratt, "Pembroke," Graham Road, Great Malvern	0	10	6
Harris, A. E., 64, Finsbury Pavement, E.C.	0	10	6
Harris, Arthur, 64, Finsbury Pavement, E.C.	0	10	6
Harris, H. E., 64, Finsbury Pavement, E.C....	0	10	6
Harris, U. A. C., 112, Harley Street, W.	1	1	0
Hayman, Chas. A., 17, Victoria Square, Clifton, Bristol ...	1	1	0
Hogue, T. Wilson, "Vermont," Dean Park, Bournemouth...	1	1	0
Holford, W. S., 23, Wimpole Street	1	1	0
Horne, A. D., Devon Villa, Newton Abbot	1	1	0
Howkins, T. Mawdsley, 57, Victoria Street, Grimsby ...	1	1	0
James, W. E., 14, Claremont Road, Surbiton	1	1	0
Jeffrey, Louis, 1, Newton Villas, Finsbury Park ...	1	1	0
Kekwick, John, The Crescent, Carlisle	1	1	0
Leigh, Percival Tookey, 6, Portland Crescent, Leeds ...	1	1	0
Mellersh, W. Francis, 7, Wyburn Villas, Surbiton ...	1	1	0
Moon, W. D., 8, Jesmond Road, Newcastle-on-Tyne ...	0	10	6
Nicol, Main, 2, Clarendon Road, Leeds	1	1	0
Norris, E. L., 3, Cambridge Road, Brighton	0	10	6
Northcroft, Geo., 41, Wimpole Street, W.	1	1	0
Peall, Fred. S., Grosvenor House, 78, Brixton Hill, S.W. ...	1	1	0
Pedley, George, 17, Railway Approach, London Bridge ...	1	1	0
Penrose, Arthur P., 33, Compton Terrace, Highbury ...	1	1	0
Porter, Frank C., 12, Oxford Street, Nottingham ...	1	1	0
Rooke, J. H., 11, Brook Street, Hanover Square, W. ...	1	1	0
Rose, Harry, 59, Queen Anne Street... ..	1	1	0
Sansom, W. B., 84, Harley Street, W.	1	1	0
Stocker, A. P., 21, Endsleigh Gardens, N.W.	1	1	0
Tanner, Thomas, 42, Oxford Street, Manchester ...	1	1	0
Tod, E. M., 35, Norfolk Square, Brighton	0	10	6
Tothill, W., 7, Montpelier Row, Blackheath	1	1	0
Wallis, J. G., 33, Albion Street, Hull	1	1	0
Webster, Percy L., 26, Welbeck Street, W.	1	1	0
Weiss, Felix Henri, 7, Cavendish Square, W.	1	1	0
Weiss, Willoughby, 7, Cavendish Square, W.	1	1	0

Williams, H. Lloyd, 2, Upper Wimpole Street, W....	... £1	1	0
Williams, Herbert, 32, Shipquay Street, Londonderry	... 1	1	0
Winterbottom, Aug., F.R.C.S., 16, Sloane Street, S.W.	... 2	2	0
Winterbottom, Charles, 16, Sloane Street, S.W.	... 2	2	0
Woolf, M. Y., 1, Marlborough Place, St. John's Wood, N.W.	0	10	6

Donations.

1894.

Irish Branch of the British Dental Association, Collected at Meetings held July 27, 28, 1894 (per Geo. M. P. Murray),			
10th donation	...	3	12 0
Western Counties Branch, collected at Meeting, July 27, 1894, 6th donation (per J. T. Browne Mason)			
	...	4	5 0
Mansbridge, J., 112, Harley Street, W.	...	2	2 0
Southern Counties Branch, collected at Meeting, October 24, 1894, 22nd donation (per F. V. Richardson)			
	...	1	10 6
Midland Branch, collected at Meeting, October 27, 1894, 18th donation (per G. G. Champion)			
	...	4	3 0
Gregson, George, 63, Harley Street, W.	...	0	10 0

1895.

"Anonymous"	...	1	1 0
Southern Counties Branch, collected at Meeting, January 26, 1895, 23rd donation (per F. V. Richardson)...			
	...	5	6 6
Ash, Claudius, & Sons, Ltd., Broad Street, Golden Square, W.	...	5	5 0
"G. W."	...	0	10 6
Rose, Harry, 59, Queen Anne Street	...	1	1 0

ORIGINAL COMMUNICATIONS.

The Treatment of Undue Prominence of the Upper Front Teeth in Children and Young Adults.

BY T. E. CONSTANT, L.R.C.P., M.R.C.S., L.D.S.

THE dental surgeon of to-day is rarely more usefully employed than when endeavouring to correct deformities occasioned by malposition of the teeth. The deformity produced by that particular form of malposition described by most English writers upon the subject as "Anterior Protrusion,"* is perhaps the most distressing, as it not unfrequently

* The term "anterior protrusion," has been objected to as unscientific and tautological. It is urged that the term should be more correctly "superior protrusion," although, I think, upon insufficient grounds. Most English

renders an otherwise beautiful face almost repulsive. Moreover, it is sufficiently common in England to justify the French caricaturist's conception of the characteristic type of English beauty. It is often markedly hereditary, a point upon which some lay great stress, and consider a sufficiently good reason for deprecating any attempt at its correction.

These considerations have induced me to bring to the notice of the profession a method of treatment that I have found extremely successful even in cases of a distinctly hereditary character. Both of the cases here described are such, and whether treatment was justifiable I leave the reader to decide.

Fig. 1 represents four models showing successive stages in the treatment of the same case. It will be seen that the first bicuspid were extracted, and the six front teeth retracted.

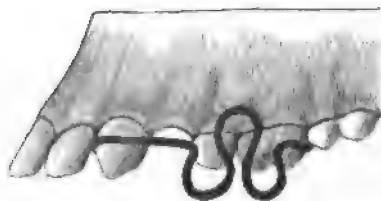


FIG. 2.

The method employed was the following:—The patient, a girl, about 13 years of age, was seen in the morning, gas administered, and the two bicuspid extracted. Impressions of the mouth were then taken, and a “bite” in wax. Tape was inserted between the canine and lateral on each side for the purpose of separating those teeth, and an appointment was made for the next day. As soon as models were taken from the impressions, a gold wire drawn down to No. 13 Ash’s gauge was fitted, as shown in fig. 2, and a corresponding wire on the other side. The distal sides of the laterals were cut away on the models to facilitate the fitting of the wires

dental surgeons understand what the term “anterior protrusion” means, and those who do not would not be much enlightened by being informed that it is “superior protrusion.”



round the front of the canines, because, if this is not carefully done, the wire subsequently either slips off the tooth or else into the gum. It is generally found in marked cases of anterior protrusion that the first molar in the upper jaw is rather lengthened, so that its crown is considerably above the level of the second molar. This is fortunate, as it allows the wire to be carried round the back of the first molar very close to it without raising the bite, as it is very seldom in such cases that the second lower molar occludes with the anterior portion of the crown of the upper second molar. The end of the wire was carried sufficiently into the palate to ensure a good hold of the vulcanite.



FIG. 3.

When the wires were satisfactorily fitted, they were removed to allow the wax bite to be carefully pressed into its place on the upper model, and stuck down in the molar and bicuspid regions. Then all of it in front of the second bicuspids was removed. Thus we had the upper model with the back teeth capped with wax with indentations upon its surface corresponding to the cusps of the lower teeth. The reason for thus capping the teeth was not that the bite should be raised (although that to a slight extent usually happens), but to give

the plate a secure hold, and to allow the lower teeth to lock into it to assist in preventing the upper molars and bicuspid from being pulled forward by the action of the wires, to which there is of course a tendency. A wax palate was then put in and the wires heated and sunk into their places, the plate being finished up as shown in fig. 3.

The next morning the plate was fitted in and the wires adjusted to the canines, the separation that was made by the tape rendering it an easy matter to get them into their place. The tension of the wires was very slight as the canines were tender from the separation by the tape, and it was thought as well to let the patient get used to the plate before much pressure was brought to bear. The patient was seen day after day for about a fortnight, and the wires considerably tightened. The patient was then shown how to work the plate, and was instructed to remove it after every meal, brush it, tighten the wires, and replace it. As she lived at some distance, she was not seen again for more than three weeks, when she sent an impression showing that the canines had been pulled so close to the bicuspid that, fearing that they might have been injured by the rapidity of their movement, the patient was instructed to leave out the plate, and an early appointment was given. When she was seen, the second of the models shown in fig. 1 was taken, the canines having moved forward again since the plate was left out, but were found to be quite uninjured. The fore ends of the wires that had been used for pulling back the canines were then joined by a wire passing round the front teeth, and pressure put upon them by tightening the spring on either side. The front teeth then came in very rapidly, so that in about another fortnight the case was practically completed, as is shown in fig. 1, model c.

Model D, fig. 1, shows the case at another interval of about a week, when all tenderness having passed away, a retaining plate was made. The bite not having been much disturbed by the treatment, and the lower front teeth not being elongated (as they usually are), the retaining plate consisted merely of a vulcanite palate, not capping the back teeth, with a gold wire passing out at the slight spaces (shown in fig. 1, model 4) between the canines and bicuspid, and going round the front teeth. This was worn for two or three months continuously,



A.

FIG. 1.

B.



C.

FIG. 1.

D.



FIG. 4.

and after that time only at night for about a year, since when it has been left out altogether, and there has been no tendency for the protrusion to recur, although nearly two years have elapsed.

This was altogether a very successful case, and I regret that I omitted to obtain a photograph of the patient before the treatment was commenced, as the improvement in the facial expression was more marked than one would deem possible. It was instructive mainly in the following particular: In cases that I had attempted previously, the treatment adopted after extraction of the bicuspid was retraction by an elastic band passing round the front teeth and putting pressure upon all six at once. I found this a very tedious method, and in the end not very satisfactory. The above case, however, taught me that if the canines were acted upon alone, they yielded before the back teeth showed any tendency to travel forward, and when the canines were once fairly started, the centrals and laterals followed without any difficulty. In fact it was an application of the principle enunciated in the old fable of the bundle of sticks. Therefore, in every case since, I have commenced by applying pressure to the canines as described, and have in consequence found very little difficulty even in the most pronounced cases.

I will now pass to the description of another case which, although not so pronounced as the former, will, perhaps, be interesting, since, through the kindness of the patient and her parents, I am able to show photographs taken at my request just before the treatment was commenced and after its completion. Fig. 4 shows models of the case before and after treatment. The treatment adopted was practically that of the former case during the first stages. There was, however, considerable difference in the after treatment. This was necessary from the fact that the lower front teeth were very elongated, and after the teeth were retracted as shown in fig. 4, model 2, it was found that only the lower front teeth occluded with the upper ones, the back teeth not touching at all. Of course, had a simple retaining plate, such as had been made for the former case, been made in this, the front teeth would soon have travelled out again, dragging the back ones with them. I, therefore, crowned the right lower first molar, which was considerably decayed, and made it sufficiently

high to prevent the front teeth from closing. I also made a plate covering the palate but not capping the teeth, but very thick in front so that the lower front teeth came into contact with it (see Fig. 5). The patient therefore was for some time only able to use the gold crown and the six lower front teeth for the purpose of mastication. The front teeth were prevented from going forward again by two thin pieces of gold wire coming from the thickened part of the vulcanite plate and turned up over the cutting edges of the central incisors, so that all that could be seen of the retaining apparatus were two little specks of gold at the cutting edges of the centrals.

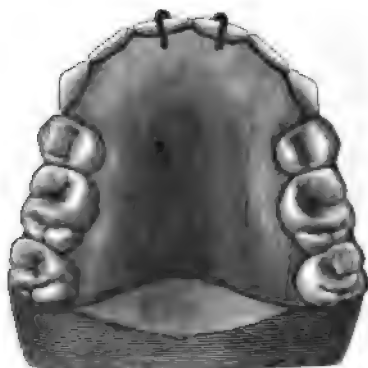


FIG. 5.

After the plate had been worn continuously for about a year (by continuously of course I do not mean without being frequently removed for the purpose of cleansing it) it was left out altogether, because it was found that the back teeth occluded on both sides, and that when the plate was out there was no tendency for the protrusion to recur.

Before concluding I should like to draw attention to the accompanying photographs of the patient illustrating the result of treatment in the last mentioned case. Although it is not what one would term a well marked case of anterior protrusion, yet it is sufficiently typical to illustrate one or two important points. The first is that the central incisors before treatment rested upon the lower lip when the features were in repose. It was, therefore, quite impossible for nature to

improve matters unassisted. In fact when I first saw the patient the protrusion was becoming rapidly more pronounced, and the lips could not be completely closed over the front teeth. Now despite anything that is taught to the contrary, when this condition exists the dental surgeon should insist upon prompt and energetic treatment. He should not stay to consider whether it is hereditary, whether the alveolus is involved, whether the growth of the facial bones will tend to correct the deformity, or indeed any of the numerous reasons for refraining from treatment that even our best text-books lay so much stress upon, but he should commence treatment at once. He may confidently assure the parents that otherwise the protrusion will never be less, but in all probability will become more pronounced.

Another point to be noted in the photographs is the shortening of the lower part of the face before the treatment was commenced. This shortening is to be observed in most cases, and does as much to detract from the beauty and harmony of the features as the protrusion itself. By permanently raising the bite, as above described, the shortening was corrected, with what results as regards improvement of the expression reference to the photograph will show.

It will be seen that I have said nothing of preventive treatment. The reason for its omission is that it would involve the question of the etiology of the condition, a question that I am not now prepared to discuss. Of course, such obvious causes as thumb-sucking, enlarged tonsils, and so forth, should be guarded against or removed. That it is ever caused primarily by the upward growth of the lower incisors I emphatically deny. Very little is known of the conditions affecting alveolar growth, a factor which must be fully considered in discussing those causes of anterior protrusion which are not obviously mechanical. I have never seen it noted even that destruction of the pulp of a permanent tooth is followed by an arrest of the growth of the alveolus in which it is imbedded, yet I believe such to be the case. My reticence with regard to preventive treatment is therefore justifiable, the more so as I do not pretend in this paper to seriously discuss the question of anterior protrusion in all its aspects, but simply to describe a method of treatment that I have found extremely successful in several difficult cases;

and I venture to hope that this account may do something to remove the somewhat widespread belief that it is advisable to refrain from attempting to remedy the unsightliness due to undue prominence of the front teeth.

A Simple Contrivance for Administering Air in Combination with Nitrous Oxide Gas.

By C. CARTER BRAINE, F.R.C.S.

THE administration of air in combination with nitrous oxide gas with the object of obtaining a quieter and longer anæsthesia than can be obtained with nitrous oxide alone (that is, without any admixture of oxygen) is now-a-days becoming a general practice. Twenty years ago the utmost care was taken to prevent the admission of any air, and in the event of after-excitement occurring it was universally attributed to the presence of a leak somewhere, and the consequent inhalation by the patient of some proportion of air with the nitrous oxide. Expert opinion has entirely changed on this point, and now air is administered constantly, either intermittently with the gas, several breaths of gas and then one of air (as recommended by Mr. Rowell), or continuously from the very commencement of the inhalation, both methods yielding good results, and with absence of the former complications of violent after-excitement. The method of removing the facepiece for a few breaths of air after full nitrous oxide anæsthesia has been produced in the ordinary way, when the operation has not been upon the mouth, is of very long standing. I have administered in this fashion on several occasions for minor surgery, the cases lasting five minutes or so, and have been present when a fibroma was dissected out from the sole of the foot, the administration lasting twelve minutes, but this I look upon as a series of administrations, and not the administration of gas and air as is now understood by the term.

The above method could never be successful for dental purposes on account of blood collecting in the mouth with its attendant dangers, rendering the re-application of the facepiece and a further administration unsafe. About four years ago it occurred to me that if air in proportions varying

according to the age and physical condition of the patient, could be at will mixed with the nitrous oxide, better results might be obtained than with nitrous oxide pure, and with this object I contrived the following addition to the facepiece, which has answered the purpose for which it was devised very well. On the left side of the ordinary Clover's facepiece a hole is cut in which is fixed the mount formerly extensively used for attaching the supplemental bag. The cap (used for covering the opening when the supplemental bag is not attached) has a slot filed in its circumference about half way round in extent ; the cap is then placed *in situ*, and holes, six in number and equidistant, are drilled through the portion of



the shaft exposed by the slot. It will now be found possible by rotating the cap to expose any number at will of these perforations, and thus admit air to the facepiece in varying proportions with the nitrous oxide. This simple contrivance can be applied to any facepiece in a short time and with very little trouble ; it should be used with an apparatus containing inspiratory and expiratory valves.

Administration.—Commence with all the holes covered, and after the patient has taken two or perhaps three inspirations of gas and the gas bag has become lax, turn on one or two of the air holes. Do not allow the gas bag to become distended, or very little, if any, air will enter through the perforations. Turn on more holes according to your patient's condition, thus children and anæmic women require more air and the powerful adult less. Should too many holes be exposed, and the patient fail to become anæsthetised, then rotate the cap in the opposite direction and lessen their

number. The anæsthesia produced is in some cases, chiefly in women, indistinguishable from that obtained by the inhalation of nitrous oxide and oxygen.

The signs of anæsthesia are loss of conjunctival reflex, fine twitchings in the orbicularis palpebrarum muscles, eyeballs fixed, being turned downwards or downwards and inwards, and stertor (when present). The first two signs mentioned are those of most frequent occurrence. The anæsthesia is certainly longer than after the administration of pure nitrous oxide, there is great diminution in jactitation and muscular movements, and the patients remain a better colour. No case of nausea or vomiting has come under notice.

It will be understood that air by this method is administered with the gas continuously, almost from the very commencement of the inhalation, and speaking from my own experience the results have so far been better than when the intermittent administration of air has been employed. When nitrous oxide and oxygen is not available the administration of nitrous oxide and air will be found to yield the next best results in the great majority of dental cases.

LEGAL INTELLIGENCE.

Prosecution under the Dentists Act.

BRITISH DENTAL ASSOCIATION *v.* LOUIS LEVEY.

IN the Southern Divisional Police Court, before Mr. Swifte, a summons was heard at the suit of the British Dental Association against Mr. Louis Levey, of 132, Stephen's Green. The defendant was called upon to answer the complaint of Thomas J. Lawler, "that on November 9, 1894, at 132, Stephen's Green, not being then registered under the Dentists Act of 1878, and not being then a legally qualified medical practitioner, he did unlawfully, within the space of six calendar months past—viz., on November 9, 1894—take and use the name or title of dentist." This is the first summons of the kind brought in Ireland.

Mr. Henry Hunt (instructed by Messrs. W. G. Bradley and Sons) prosecuted.

Dr. Condon (instructed by Mr. J. J. O'Meara) defended.

Mr. HUNT said the summons was brought at the instance of the British Dental Association, which was incorporated in 1880, under the third section of the Dentists Act of 1878. It was the first prosecution of the kind in Ireland. The object of the Legislature was to prevent the public from being imposed on by persons who untruly represented themselves to be qualified dentists. Several prosecutions had been held in England under the Act. Unless he obtained the sanction of some of the medical authorities, such as the universities and licensing authorities, a private person was not entitled up to the year 1886 to prosecute under the Dentists Act. By an amending Act passed in that year, private persons were granted this right, so that the administration of the Act would be properly facilitated. Acting on the initiative of the Association, Mr. Bradley sent Mr. Thomas J. Lawler, the complainant, with a card bearing Mr. Levey's name and the word "dentist" to the defendant at the address in Stephen's Green, also given on the card. Mr. Lawler was told to call the next day, and on November 9, on calling, he was shown into a room where he met the defendant, who stated in answer to a question that the card was his. Mr. Lawler asked him for some other cards, and the defendant said he was getting more cards printed, and would let him have them in a few days. Under the Act the Dentists' Register was evidence, and the absence of a name on that register was proof that the person whose name was admitted had not been registered. The penalty under the Act was not to exceed £20.

Mr. THOMAS J. LAWLER, in answer to Mr. Hunt, gave evidence in support of counsel's statement.

Mr. G. W. P. MURRAY produced the Register of Dentists; Mr. Levey's name did not appear in it.

The witness was cross-examined by Dr. Condon, to show that qualified dentists had non-registered persons employed under them; and as to whether the witness had known of Mr. Levey acting as partner under registered dentists.

Dr. CONDON said his defence was that Mr. Levey was personally entitled to be registered under the Act, but there was a provision that made it a sort of obligation that he should be registered, and that was the only point in the case.

Mr. Levey was engaged in practice at the time of the passing of the Act. Under the Act every person was qualified to be registered who, before the passing of the Act, was practising as a dentist.

Mr. SWIFTE : But the Act says not " unless he is entitled to be registered," but " unless he is registered."

Dr. CONDON said that was the technical offence. His client was practising before the passing of the Act, and had been practising since. He had been in Dublin for the last sixteen years, and had commenced under an agreement as partner with a gentleman who was fairly eminent in his profession, and was registered, Mr. A. J. Bradshaw, of Great Brunswick Street. Counsel produced a copy of the partnership agreement, dated October 21, 1880.

Mr. HUNT : That is no evidence.

Dr. CONDON said that it was not evidence, but he tendered it as an element in the case. Later on his client was with Mr. Hindes, and he was at the present moment in partnership with Mr. Hindes, at 132, Stephen's Green.

Mr. THOMAS HINDES deposed, in reply to Dr. Condon, that he had known Mr. Levey for a great number of years. Defendant had been with him eight or nine years ago, and recently Mr. Levey and he had gone into partnership in Stephen's Green, and they carried on the business under the style and title of American dentists.

Mr. HUNT : This is wholly irrelevant ; it is no defence.

WITNESS : Mr. Levey assists me by doing the mechanical work.

Mr. HUNT : I have nothing to ask this witness. What he does is no defence whatever, and it only re-acts on himself.

Mr. SWIFTE : Surely if Mr. Hindes was the predominant partner, to use a classical phrase, his name ought to have been on the cards, and not that of Mr. Levey.

Dr. CONDON contended that the card presented to the defendant by Mr. Lawler, being an old one, did not necessarily prove that Mr. Levey had practised within the six months' limitation of the retrospective operation of the Act.

Mr. SWIFTE : The case seems to have been clearly proved. If you can show that although not actually registered he was a duly qualified and competent practitioner it will be an extenuating circumstance.

Dr. CONDON said he only presented his arguments as an extenuation, because clearly there was a technical offence. The defendant's skill was proved by the agreement with Mr. Bradshaw.

Mr. SWIFTE: Do you admit that the defendant is entitled to be registered?

Mr. HUNT: I do not.

Dr. CONDON said they could not prove at this distance of time that the defendant practised before the passing of the Act. The agreement in October, 1880, would actually justify them in saying so, because it took the defendant in as a fully expert person in the business, and described him as "an assistant, either as surgical or mechanical, in the business of a dentist, for a period of two years from the above date" of 1880.

Mr. SWIFTE: That shows that he was practising, but how does it show that he was qualified at that time?

Dr. CONDON said that it showed it indirectly, for the wording of the agreement clearly proved that Mr. Levey must have been an articulated pupil or a student practising before '78. Five years, he thought, was the period of apprenticeship.

Mr. HUNT: They have now to be examined by the College of Surgeons.

Mr. SWIFTE: A solicitor's clerk might be competent to be a solicitor, but is not entitled to act as one. This is a somewhat analogous case. Mr. Hunt says *Mr. Levey may be skilled*, but that he is not entitled to be registered. Make out that he, through some neglect, did not get himself registered, though he is entitled to be registered.

Dr. CONDON said that by an application to the General Council they might get a special order in the case of Mr. Levey. They had been taken by surprise in this case, for they did not know who Mr. Lawler was until the summons was served a week ago.

Mr. HUNT said the defence simply aggravated the offence. He left the case in his worship's hands as regarded the penalty, but he thought, as an example to others, the penalty should be a heavy one.

Mr. SWIFTE said the Legislature, for the protection of the public, had laid down a hard-and-fast line when a person must be in order to qualify himself for practice as a dentist.

There was a great deal of force in what Mr. Hunt said—that the defence was rather an aggravation of the offence. For all these years Mr. Levey had been describing himself, in legal documents and otherwise, as a dentist, and thereby contravening the provisions of the Act. There was a conflict between counsel as to whether Mr. Levey was entitled to be registered or not. He was not going to give any opinion on that, as it really was not the question. It rather appeared to him that if Mr. Levey could be registered he would have got himself registered during these years, and thereby protected himself from any such proceedings as were now taken. The object of the statute was very salutary; it was to protect the public from quack practitioners—to put it plainly. It might be that Mr. Levey was *highly qualified*; if he were a man of any intelligence, he should be, after all this practice, a very competent dentist. But he was not registered, and had no defence. As it was the first case of the kind in this country, he did not want to be too hard; but at the same time, remembering that it might be difficult to find out cases of this sort, he did not think, in the interests of the public, a smaller penalty than £5 should be imposed. He would also give £2 2s. costs.—*Irish Times*.

Action for the Recovery of Fees.

ON March 19, Judge Stonor, sitting at the Marylebone County Court, heard the case of "*Roberts v. Webb*," in which the plaintiff, a dentist, practising at Kensington, sued the defendant, a married lady, for £20, being £1 for stopping several of her teeth, £5 for administering gas and extracting teeth, and £14 for a set of fourteen false teeth. The defendant had paid £6 into Court. Mr. Thompson, solicitor, appeared for the plaintiff, and Mr. Ritter was counsel for the defendant.

The plaintiff said the teeth were supplied in June, 1894. The defendant went away to Buxton on the same day, and he had never seen her since. In September, 1894—four months afterwards—he sent in his account, and it was only then that Mrs. Webb complained of the teeth and sent them back, saying that they were no use to her, as they did not fit. Judging by the condition of the teeth when they were returned they had evidently been used during the whole of the time. He was quite willing to alter them if required, but defendant said she had got another set.

After hearing the evidence of the contending parties the Judge

said that the defendant by wearing the teeth had accepted them. He therefore gave judgment for the plaintiff, with costs.

Mr. RITTER (producing the teeth): Will your Honour order the plaintiff to take back the teeth for the price of the gold in them, £3?

The Judge consented to the application of Mr. Ritter, giving judgment for £17, and ordering the teeth to be returned to the dentist.—*Morning Post.*

Action for the Recovery of Fees.

At the Chesterfield County Court, Alexander Witkowski, surgeon dentist, Norfolk Row, Sheffield, sued George Driver, of Ashgate Road, for £10 10s. for work done and material supplied, viz., a set of teeth. Mr. C. Barker, of Sheffield, appeared for the plaintiff, and Mr. J. Middleton for defendant.

The plaintiff's case was that defendant ordered a set of teeth from him at his room at Mr. Lee's premises in the Market Place, Chesterfield, and the necessary work was done and a set of teeth made. The defence raised was that defendant was not in a proper state of health to give such an order, and his wife was called to state that she told plaintiff the teeth would be useless to her husband, as he would leave them on a taproom table or a bar counter. She insisted that the teeth should not be made, but the plaintiff, who came to the house about them, said he should make the teeth, as he had received the order for them. Witness said her husband was often very excited, and at other times he acted like a baby.

Mr. Middleton urged there had been no acceptance, and the transaction came under section 4 of the Sale of Goods Act, 1893.

The plaintiff was examined by his Honour as to how the cost was made up, and his Honour said it appeared a large proportion of the cost was for professional service. After hearing legal arguments his Honour agreed to nonsuit plaintiff, but gave him leave to move in a higher court for £5 5s. damages for non-acceptance of goods.

LIQUEFACTION OF HYDROGEN.—In September of last year Professor Dewar was within measurable distance of liquefying hydrogen, and indeed by some it is considered that he actually obtained it, but was not able to handle it long enough to learn much about it. Professor Olszewski of Cracow has, however, definitely succeeded in determining the critical temperature and the boiling point of hydrogen—the former he finds to be -233° and the latter -243° .

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE usual monthly meeting of the above Society was held on the 1st inst., Mr. FREDERICK CANTON (President), in the chair.

The minutes of the previous meeting having been read and confirmed, the following gentlemen were elected members of the Society:—Messrs. Francis Mark Farmer, L.D.S.Eng., 17, Great Marlborough Street, W.; Harry Symes Prideaux, L.D.S.Eng., 41, Wimpole Street, W.; F. G. Frankland Rooke, L.D.S.Eng., 42, Kensington Gardens Square, W. (resident); J. Main Nichol, L.R.C.P., M.R.C.S., L.D.S.Eng., 2, Clarendon Road, Leeds; George Arthur Peake, L.R.C.P., M.R.C.S., L.D.S., Alma House, Cheltenham; Frank C. Porter, L.R.C.P., M.R.C.S., L.D.S., 12, Oxford Street, Nottingham; George Nash Skipp, L.D.S.Eng., Sale, Cheshire (non-resident).

The following gentlemen were proposed as non-resident members of the Society:—Messrs. John William Tomlinson, L.D.S.Eng., 8, Warrior Square, St. Leonards-on-Sea; William Jarvie, M.D.S., 105, Clinton Street, Brooklyn, New York.

The CURATOR said the Society would be very glad to receive for the museum any old specimens of mechanical dentistry, more especially ivory plates with natural teeth upon them. Such specimens were becoming year by year more scarce. Some years ago a member of the Society presented a large number to the museum, and further additions of specimens would be of great value.

Mr. BRUNTON exhibited a modification of the right-angle hand-piece known as the Hodge. No structural alteration was made, but the portion which carried the bur was shortened to enable the operator to get at the more awkward positions in the mouth, and to accommodate shorter bites. He also showed a simple balance for weighing amalgam, and a rack for holding mallet plugger points arranged so that they could be changed with one hand.

Mr. G. G. CAMPION read a paper on Studies in Superior Protrusion:—

In opening a discussion on protrusion before this Society in March, 1892, Mr. Hepburn described with some minuteness, and I believe, for the first time, a distinct variety of this deformity; a variety which cannot be attributed "to mechanical influences, such as thumb-sucking, or the impingement of antagonising teeth," and where "the cutting edges of the lower incisors exist, as it were, in space, pointing upwards towards the palatal vault, and free from contact with any of the super-existing structures." He also spoke of this distinctive protrusion as being associated with an increase of bone in the premaxillary region, and elsewhere has expressed the opinion that it may, at any rate in some cases, be caused by a continued growth of the premaxillary bones as distinct from the maxilla. Now in these cases Mr. Hepburn described the upper canines as being erupted in a large number of

typical cases in normal antagonism with their opponents, but, judging from the examination of a considerable number of specimens, I am inclined to think that the upper canines, although often in antagonism with their opponents, are not in "normal" antagonism.

In the general appearance presented by this form of protrusion, the uniform extension of the upper arch will be noticed, as well as the wide space between the lower incisors and the upper gum, the upper canines biting, not as they should behind their opponents, but in front of them; and this abnormal bite extends to the bicuspid and molar region as well, the upper bicuspid articulating in front instead of behind their opponents, and the upper molars being to the same extent in advance of the lowers.

In examining during the last twelve or eighteen months such models of this deformity as I have happened to come across, and noticing such cases as from time to time presented themselves in patients, I obtained a list of thirty-nine cases of different kinds and degrees of protrusion, and in only four of these, or just over 10 per cent., was the molar occlusion normal on both sides of the mouth, while in twenty-four cases, or about 61 per cent., the lower teeth articulated the breadth of a bicuspid behind their normal position. In other cases the articulation varied on the right and left sides of the mouth, and in some the lower molars and bicuspid met cusp to cusp, or half the breadth of a bicuspid posterior to the normal bite. Tabulating the cases and briefly expressing these two positions as Back and Half Back, we have:—

LEFT.				RIGHT.				
N.	...	...	...	N.	...	...	...	4 Cases.
B.	...	...	...	B.	...	...	...	24 "
N.	...	...	...	H.B.	...	...	...	2 "
B.	...	...	...	H.B.	...	...	...	5 "
H.B.	...	...	...	B.	...	...	...	1 "
H.B.	...	...	...	H.B.	...	...	...	1 "
—	...	...	...	H.B.	...	...	...	1 "
H.B.	...	...	...	—	...	...	...	1 "

This list, however, probably exaggerates the number of those with back occlusion on both sides, because in several of the models teeth had been lost, and the position of the others consequently deranged, and I have classed as back some in which perhaps a lower second bicuspid has been removed, and the molar come forward into a more normal position if the first bicuspid and canine showed themselves distinctly behind instead of in front of their opponents. It would be necessary to obtain particulars of a large number of cases in which no teeth had been removed in order to estimate with any accuracy the proportion which show this mal-occlusion in the masticating region.

I was at the time a good deal surprised at this result; if not quite exact, the figures at any rate show that in a large proportion of cases, a derangement exists which, whatever its origin and causes, is estab-

lished early in the life of the child, for it is to be seen not only in the permanent but also in the temporary teeth.

I found, too, that this mal-occlusion is by no means confined to cases of protrusion, but exists also in many cases of general crowding of the upper teeth, of overlapping centrals, instanding or outstanding laterals, and projecting canines, and also that it is possible to find quite a number of cases in which children who are brought to us for consultation on account of general crowding of the upper teeth, present also the condition of protrusion of the upper arch in relation to the lower, though this is subordinate to, and masked by, the general irregularity. It is not easy to see the exact significance of this derangement, or the way in which it is brought about. At first sight it seems as if it might be occasioned in one of three ways: either (1) a bodily protrusion of the maxilla, or (2) a want of development of the mandible, or (3) posterior displacement of the latter bone, if it be of normal size. My impression is that in some cases we have to do with a defective development of the mandible, and in others with a bodily protrusion of the maxilla, but the point is a very difficult one to settle. It cannot be decided by absolute measurements of the mandible, for at the age of 12 or 14 the angle of this bone is not sufficiently developed to afford any point definite enough to measure from, and in addition, the determination of the average size of this bone at different ages, and in the different sexes, would present too many fallacies to make the method of any use where such comparatively small differences are of importance. But it occurred to me that some proportional measurements made in a similar way to that used by anthropologists in determining the projection of the dental arch in relation to the rest of the face, by means of the gnathic index, might give more definite results. On twelve children with normal dentures I tried computing this index by measurements taken from the auricular point (centre of external auditory meatus). These, however, when compared with similar indices of children with protrusion, showed no definite results, the variation in normal subjects being very great and offering no marked contrast to those in which protrusion existed.

Another feature worthy of notice in these cases, and which has never, so far as I am aware, been carefully studied, is the breadth of the dental arch and its relation to the length. In a paper read before the Society many years ago, on an attempted classification of irregularities of teeth, Mr. Oakley Coles, adapting two terms used by anthropologists in cranial measurements, proposed the words "brachiocheiloid" and "dolichoid" to denote respectively arches which were above the average measurements in breadth and length; but his application of these terms was based on no absolute measurements of the arch, nor as obtains in their use by anthropologists on any relation between the measurements of length and breadth. So applied, their use was arbitrary and impossible of exact application, and made no allowance

for necessary variations in the absolute size of arches which, *cæteris paribus*, will obviously depend on the absolute size of the teeth. The terms, however, seem convenient ones for adoption in any discriminating classification of the different forms of arches, if their application be based on relative measurements, for this would allow for any variation in the absolute size of the teeth ; but the application of these terms could obviously be only made after a careful and extended study and measurement of a large number of fairly normal arches. I have attempted to apply this method of relative measurement to the arches in cases of protrusion for comparison with normal dentures, and the result is striking and suggests some interesting conclusions.

Three years ago, in studying a series of models in the museum of the College of Surgeons, to ascertain their bearing on the accepted views as to the development of the jaws, Mr. Tomes took the following as fixed points for measurement. For length, "the distance from the middle of the back edge of the grinding surface of the second temporary molar to the centre of the back of the neck of the central incisor of the same side, at the point where the gum joins it;" for width: "the distance between the middles of the grinding surfaces of the second temporary upper molars, and afterwards of the second upper bicuspid." Now these points, though doubtless best suited to the purpose Mr. Tomes then had in view, are not so suitable in studying protrusion. They would, for example, not record any protrusion resulting from the inclination forwards of the incisors. So I took instead—for length, the distance from the mesial extremity of the cutting edge of the central incisor to the centre of the posterior border of the masticating surface of the six-year molar. The mean of the measurements on each side was taken as the length of the arch, there being often a slight discrepancy between the measurements of the two sides. For breadth I took the measurement across the arch between the most prominent points on the labial surfaces of the first bicuspid and first temporary molars. The first bicuspid was chosen for the point of measurement of breadth, as being about midway between the extremities of length, and also because there is more variation in the breadth in the bicuspid than in the molar region ; and it was precisely this variation which I wished to study. And taking extreme points for length measurement, it seemed well to take them also in determining the breadth, and so the labial surfaces were fixed on instead of the centres of the masticating surfaces which were chosen by Mr. Tomes. The length and breadth being determined, their relation was calculated in the same way as the cephalic index.

$$\frac{\text{Breadth} \times 100}{\text{Length}} = \text{Breadth index of the arch.}$$

Determining in this way the relative length and breadth of a certain number of fairly normal arches, I found the index to range approximately from 105 to 115. As compared with these I found in 28 cases, showing different degrees of protrusion, that the indices varied

from 84 to 102. Four only had an index of 100 or over, *i.e.*, had almost normal arches, and all four presented the posterior occlusion of the lower molars. In three of them the protrusion was more than accounted for by this mal-occlusion, and in the fourth, by placing the models in their proper articulation, the protrusion was rendered comparatively slight—so slight as to be readily cured by pressing the incisors back till the slight spaces between them should be obliterated; this case being one in which the protrusion caused by the posterior occlusion of the lower teeth had been exaggerated by thumb-sucking. In the other cases the index averaged about 93 or 94, showing arches relatively narrow.

In eleven cases of normal arches the average width was 46.9 mm. and in twenty-six cases of protrusion only 41.3 mm., the average width of the normal arches thus exceeding that of the protruded arches by 5.6 mm.

Now this is very interesting and suggestive, although the number of normal arches measured is too small to eliminate the possible fallacy arising from the different sizes of teeth in the different arches. But it certainly suggests that there may be some causal relation between the narrowness of the protruded arches and their length. The argument looks seductive, but the facts might, without much difficulty, be stated so as to suggest precisely the opposite conclusion. An examination of these cases, it might be said, shows in many of these an abnormal development of bony tissue in the region of the upper incisors. This excessive formation of bone, due to an abnormal proliferation of bone cells, carries the teeth forward with it, and with the pressure which we know to be constantly exercised by the cheeks and lips on the exterior of the dental arch, what more natural than that as a result of its elongation its sides should partially collapse? This seems to be partially, at any rate, the view of Dr. Talbot.

But that the narrowness of the arch has some causal relation to its protrusion is shown, I think, by those cases occasionally seen where on one side of a protruded arch one of the teeth has failed to erupt. Here we find that there is a *vis a tergo* on the opposite side, which has driven the centre to the side of the unerupted tooth, and has left one central (the one belonging to the side on which there is the full complement of teeth) more prominent than the other. It is fair to conclude that in these cases, had the missing tooth remained and erupted in line, the protrusion would have been symmetrical and more pronounced than was actually the case. And further, we are justified, I think, in concluding that the same cause, according to the position of the developing teeth in their alveoli, may eventuate either in protrusion, in general crowding or overlapping of the incisors, or in the exclusion of one or more of the teeth from the dental arch, and that we must cease to regard protrusion in, at any rate many cases, as essentially and peculiarly a deformity by itself.

Talbot claims to have shown by an enormous number of most pains

taking and careful observations made by himself and others all over Europe and the United States, and extending over a period of no less than eight years, that the lateral diameter of the arches of certain peoples of the human race has diminished perceptibly within historic times.

Whether the observations he records are sufficiently extended to warrant quite so unqualified a statement is perhaps open to question, but in the narrowness of the dental arch, which seems in general to be associated with protrusion, we have, I believe, on merely mechanical grounds, an important determining cause of the deformity.

The conclusions, then, which I think we may draw from the points to which I have called attention are : (1) That protrusion (where it is not due to external mechanical causes) is not simply a deformity of the front teeth, but one in which the arch on a whole is involved ; (2) that it cannot be altogether regarded as a deformity *sui generis*, but is, in many cases, simply an alternative result of the action of the same causes which produce general crowding of the teeth, transitional forms being seen which exhibit both abnormalities in combination ; (3) that, if not actually found in the temporary teeth, it is at least foreshadowed in a large number of cases by posterior occlusion of the lower temporary molars ; and (4) that in estimating the relative importance of the different factors concerned in its etiology, a large share as a determining cause must be assigned to the narrowness of the dental arch.

Mr. DAVID HEPBURN expressed the thanks which were, he thought, due to Mr. Campion for his very able paper upon a very important and difficult subject. On the question of superior protrusion he said that though, no doubt, there were special cases which might be shown to be inherited from one or both parents, yet on the other hand, there were a large number of cases which seemed to spring up *de novo*. He had some cases under treatment at the present time in which the parents having perfectly normal jaws and particularly fine sets of teeth, one or more of their children had developed this peculiar condition. Whether it was due to some peculiar state of development of the cranial bones at a very early stage, or to the abnormal growth of the bone of certain portions of the jaw, was very difficult to decide. The abnormality appeared generally to commence with the eruption of the upper permanent teeth, increasing in intensity for three or four years, and then apparently ceasing. Within the last two months he had seen a case of pronounced superior protrusion in a child aged 4½. He had never previously in a child so young met with anything which could be called distinctly superior protrusion, though he had sometimes seen conditions which might indicate protrusion subsequently, such as an abnormally long alveolus with two rounded eminences above the temporary incisors. In this particular case the child had distinct superior protrusion to the extent of about half an inch. It was the only case of the kind he had met with.

The PRESIDENT said in cases he had seen the patients appeared to be suffering from post-nasal growths. This might possibly have something to do with the protrusion, the cases seeming to occur continually together.

Mr. STORER BENNETT said he had placed on the table four specimens from the museum to which he wished to direct attention. Mr. Campion did not in his paper appear to draw any special attention to the extreme shortness of the molars in these cases. It was a matter of common observation that in cases of superior protrusion the molars were erupted to a very slight extent. He (Mr. Storer Bennett) thought that the shortness of the molars was one element in determining these cases. Then of course they had to do with a raised condition of the lower incisors and with their fan-shaped arrangement, often noticeable. The lower incisors biting against the backs of the upper ones, and later on against the gum, drove the upper teeth forward. The reason for the high lower incisors in many instances might be two-fold. It was sometimes due to difficulty in the eruption of the lower canines. In one specimen exhibited the lower canines were pressing against the roots of the lower incisors and driving them inwards; and there was the commencement of the fan-shaped arrangement of the four lower incisors. In another specimen it was more marked still. The rising of the lower incisors in such cases appeared to be due to the difficulty of eruption of the canines. These were two of the factors starting the commencement of superior protrusion; the moment the front upper teeth began to travel forward, the lower lip invariably dropped behind, and that had a very large influence in continuing the protrusion when once started. He had brought down some slides illustrating these cases, but unfortunately, owing to the failure of the light, they were not able to be shown by the lantern.

Mr. CAMPION briefly replied and the meeting terminated.

The Dental Hospital of London.

THE Thirty-seventh Annual Meeting of this Institution was held at the Hospital on March 13, Mr. HENRY HARBEN, J.P., a Vice-president in the chair. The report was unanimously adopted.

The Committee of Management congratulated the Governors on the continued usefulness and prosperity of the charity, but regretted the fact that the largest proportion of the donations still emanated from the members of the dental profession instead of from the public. The great benefit which the hospital continues to afford to the suffering poor is manifested by 58,499 cases having been treated during the year 1894, being 3,174 in excess of those of the previous year, and 35,240 in excess of the number treated in 1874, in which year the

hospital was moved from Soho Square to its present site. It has been found absolutely necessary, in consequence of the increased number of patients, the crowded state of the waiting rooms, the absence of passage room, and the insanitary, inadequate, and badly-fitted condition of the present building, and back premises being unattainable, to build a new hospital; a special appeal has been issued for the necessary funds, and the committee have the pleasure to acknowledge £11,223 16s. 4d. The value of the present site is estimated at £15,000 to £20,000 (but this sum cannot be realised until the new building is erected), making together about £26,000, and as it has been estimated that the cost of the site and the new hospital will be about £40,000, there remains a balance of £14,000 to be collected, which sum the committee have no hesitation in asking the public to speedily contribute. The new site is purchased, and the houses upon it are let at such rentals as pay the interest on the money advanced by the bank. Dentistry is one of the few specialities of the healing art that is justified in possessing a special hospital, the Committee of Management therefore have no hesitation in making very urgent appeals—firstly, for the funds necessary to erect the new hospital, and, secondly, for an increased number of annual subscribers to enable the charity to continue its usefulness to the poor, and to meet the cost of maintenance, the hospital being absolutely free from any endowment, and relying entirely upon the free-will offerings of the charitable public to be enabled to carry on its useful work.

Students' Society of the Dental Hospital of London.

AN ordinary meeting of the Society was held on Monday, March 14, when some interesting casual communications were brought forward.

Mr. CARTER showed a model of the upper jaw of a patient, aged 25. The permanent laterals had not erupted, and their positions were occupied by the permanent canines. The temporary canines were retained, and stood between the permanent canines and the first bicuspid. He also presented a model of the mandible of a patient aged 16, where the permanent canines had erupted within the arch immediately behind the permanent laterals. One permanent central occupied a fairly normal position; the other was twisted and placed between the two permanent canines. The temporary canines were retained.

Mr. DOUGLAS showed an upper third molar, with four distinct and separate roots: an enamel nodule of some size was present below the neck and between the two anterior roots. There were twelve well-marked cusps on the crown.

Mr. NOWELL showed a right upper second permanent molar, with

the anterior, buccal, and palatine roots united throughout their entire length by a thin plate of dentine and cementum ; the posterior buccal root was extremely thin.

Mr. BONNALIE showed a lower second permanent molar with the posterior root bifurcated.

Mr. MOUNTFORD showed a model of the upper jaw of a woman aged 35. A supernumerary tooth was present between and behind the right lateral and canine. The patient said that her brother had a "extra" tooth in a similar place.

Mr. W. F. FORSYTH showed a model of an upper central permanent incisor with a hypertrophied cingulum. The cingulum reached nearly as high as the cutting edge of the tooth, like a conical spur.

Mr. F. L. DODD read his paper on "The Aims and Objects of our Students' Society, and how best to fulfil them." The paper was followed by a good discussion, after which Mr. Dodd briefly replied.

The PRESIDENT announced that the Society's prize for the best paper read during the past year had been awarded to Mr. N. C. Bennett. Mr. Clayton Woodhouse's prize for the best casual communication had been divided between Mr. H. W. Turner and Mr. Padget.

The President announced his intention to offer a prize to be competed for during the present year. The prize would be given to the writer of the best account of a hospital case or cases serving to further illustrate any specimen existing in the Odontological Society's museum.

The National Dental Hospital.

ANNUAL REPORT FOR 1894.

THE annual report to the subscribers of the above Hospital has recently been issued. The Committee of Management have sanctioned the appointment of a second house surgeon, to enable the increasing work of the Institution to be efficiently organised and carried on. The most serious matter occupying the attention of the Committee throughout the year, has been the furnishing of the Hospital. Twelve new dental chairs have been provided at a cost of some £12 each ; but several more are really required. £296 19s. 6d. has been received in donations during the year. The amount of annual subscription was £143 10s., and although this amount shows a great increase on that of the previous year, it is much below what the Hospital should be able to count upon.

Mr. SIDNEY SPOKES, M.R.C.S., Dean of the Hospital, in a supplementary report says :—"The number of attendances made by patients during the past year amounted to 31,851, and that the number of operations performed was no less than 40,908. The number of student

(whose duty it is to carry on this useful work) has varied from thirty to forty, and I need scarcely remind the Committee that any encouragement shown to students will indirectly tend to promote the success of the charity. A very considerable proportion of the patients requiring extraction of the teeth are now able to take advantage of the inhalation of nitrous oxide gas, and in this way 16,717 operations were performed. On the other hand, out of the large number of preservative operations performed, no less than 2,225 were gold stoppings.

"Changes in the staff were brought about by the resignation of two anæsthetists, Dr. A. E. Bridger and Mr. Percy Edgelow. After considering the claims of several applicants, the medical committee recommended Drs. Reid Holmes and Harold Low for election by the Committee of Management. Since then Mr. W. R. Humby, who had previously resigned his position as Dental Surgeon, has found it necessary to discontinue his Demonstrations on Dental Mechanics, and the school thus loses the services of a gentleman who has done much in the past both for the Hospital and College."

Annual Dinner of the Odonto-Chirurgical Society.

THE Annual Dinner of the Odonto-Chirurgical Society of Scotland and licentiates in dental surgery, was held on March 15, in the saloon of the Balmoral Hotel, Edinburgh. Mr. REES PRICE presided, Mr. J. GRAHAM MUNRO acted as Croupier, and altogether about forty gentlemen were present.

After the usual loyal and patriotic toasts had been duly honoured, the CHAIRMAN proposed "The Dental Diploma," since the granting of which, he said, thirty-five years had elapsed.

Dr. P. A. YOUNG gave "The Odonto-Chirurgical and Sister Societies," to which Mr. DURWARD, President of the Odonto-Chirurgical Society, and Mr. W. B. PATERSON, Secretary of the British Dental Association, replied.

At an interval Mr. Andrew Wilson was presented with a handsome timepiece and an album, and, for his wife, an opera-glass.

In making the presentation, Mr. BOWMAN MACLEOD said that those who knew Mr. Wilson loved and respected him. He had been associated with them in connection with the movement in dentistry for the last sixteen years, more particularly in connection with the institution of the Dental Hospital School, and the keeping of it going. He had now seen fit, after sixteen years' service, to retire, not because he had grown tired of serving his profession and the poor, but he saw behind him many young men, and retired in their favour.

Mr. WILSON briefly replied, and afterwards proposed "Continued prosperity to the Dental Hospital and School."

Among the other toasts was "The Licensing Bodies," proposed by the CROUPIER, and replied to by Dr. MURDOCH BROWN—who thought that quackery could not be stopped by legislation, but that it must be done by education of the public—and by Mr. EWING.

Songs and recitations were contributed at intervals.

The Annual General Meeting of the Odonto-Chirurgical Society was held in the Rooms, 31, Chambers Street, in the afternoon—Mr. WALTER CAMPBELL, L.D.S., President, in the chair. He delivered a valedictory address, and introduced his successor, Mr. J. Stewart Durward.

Devon and Exeter Dental Hospital.

THE Annual Meeting of the Devon and Exeter Dental Hospital was held at the Guildhall, Exeter, on March 29. The Right Worshipful the Mayor (Mr. A. R. STEELE PERKINS), presided.

The Committee presented their fifteenth annual report with renewed anxiety as to the future financial position of the hospital. Its usefulness continued to be fully appreciated; 3,764 patients availed themselves of this charity during the twelve months. The receipts for the year had been £120. 18s. 1d., and the payments £135 1s. 6d. showing a deficit of £14 3s. 5d., which, after deducting £9 14s. 2d. brought from 1893 account, left a balance of £4 9s. 3d. due to the Hon. Treasurer on December 31, 1894. The Committee regretted the loss they had sustained by the death of their late Hon. Treasurer, Mr. Fred. Townsend. Mr. J. M. Ackland had consented to carry out the duties of this office. The late Hon. Secretary having resigned, Mr. Henry Yeo, by request, had placed his services at the disposal of the Committee, who recommended the re-election of the two retiring members of the Committee of Management, Dr. Bayne and Mr. George Franklin, with the addition of Mr. C. R. Collins; also the re-election of the Hon. Treasurer, Mr. J. M. Ackland. The Committee regretted that in the distribution of the Hospital Saturday Fund, their share had been reduced by one half, *i.e.*, from twenty guineas (ten subscription and ten donation) to ten guineas (five subscription and five donation).

In consequence of the condition of the interior of the building now rented, it was estimated that nearly £30 would be required to put it into repair, for which the Committee were liable. They expressed their grateful obligation to the staff for their untiring interest in the patients, and also acknowledged the gratuitous services of the auditors the Rev. Dr. Dangar and Mr. W. S. Mortimer.

Mr. J. T. BROWNE-MASON read the report of the Medical Sub-Committee.

The MAYOR proposed the adoption of the report, the Rev. Dr. DANGAR seconding the motion.

Mr. ACKLAND proposed the election of Mr. Lee as President for the ensuing year. Mr. HARTNOLL seconded the proposition, which was carried unanimously.

Mr. BROWNE-MASON moved that a vote of thanks be given to Mr. Franklin, who for the past two years had worked with untiring zeal for the benefit of the institution, and especially in regard to the augmentation of the fund. Mr. VARWELL seconded the proposition ; which was carried unanimously.

A similar vote of thanks was given to the Mayor for presiding, on the proposition of Mr. RUSSELL COOMBE, seconded by the Rev. H. W. MCGRATH:

His WORSHIP, in reply, alluded to the Hospital Saturday Fund distribution, and said this year he might have some little influence in the matter, and perhaps obtain for the hospital the same amount as in previous years. He hoped the doors of the hospital would never be permitted to be closed for want of funds.

Glasgow Dental Hospital.

THE Tenth Annual Meeting of subscribers to the Glasgow Dental Hospital was held on March 21, in the Religious Institution Rooms, Buchanan Street—Lord DEAN of Guild Brown presiding.

Mr. D. M. ALEXANDER submitted the annual report by the directors, which stated that the number of patients availing themselves of privileges of the hospital showed again a large increase as compared with that of the previous year. During the year 7,122 cases were treated, being an increase of 1,395 over those of 1893. Of that number, 3,817 were extractions and 3,305 preservative operations. The treasurer's accounts showed that the financial progress of the hospital was being maintained. The continued growth of the hospital pressed upon the directors the imperative necessity of procuring larger premises in a more central position. The situation of the present premises away from the centre of the city had never been satisfactory, and had retarded somewhat the growth of the hospital, while the accommodation was now quite inadequate for the increasing work. The directors had been examining various buildings in suitable sites, and had had plans and estimates prepared which showed that a suitable building could be procured and converted into a commodious Dental Hospital, with proper equipment, for a sum of about £3,000.

The CHAIRMAN, in moving the adoption of the report and financial statement, said that since the hospital commenced it had done most excellent work at a very small cost, the importance of which could scarcely be estimated. He congratulated those who had the management of the institution upon the result of the financial year, and went on to say that he had not the least doubt that when the public were

appealed to for the £3,000 aimed at for the new premises, they would rise to the occasion, and the money would be raised.

Mr. WILSON seconded, and the reports were adopted.

Directors were afterwards appointed, and the meeting terminated with the usual votes of thanks.

HOSPITAL REPORTS AND CASES IN PRACTICE.

Case of Partial Facial Paralysis induced apparently through Antral Trouble.

BY T. CLARENCE, L.D.S.Eng.

THE following notes of a case of partial facial paralysis induced apparently through antral trouble, may be of interest to some readers:—

December 7, 1893.—Mrs. Nisbitt, aged 40, of Hoxton House Asylum, complained of pain over the malar bone and headache on the right side, with little sleep at night and dryness of the nostrils; pus was, however, coughed up from back of throat in the mornings.

On examination the right cheek was found slightly swollen and the mouth drawn round slightly to left side. The patient had previously been to the London Hospital, where she was treated for lupus. A few days before being seen, a little pus (according to the Assistant Medical Officer) was noticed in the position of the lachrymal duct.

The patient was given chloroform, and the right upper first permanent molar, which was loose, extracted, and the antrum opened through the anterior buccal socket with an elevator. No discharge was perceptible, and the antrum was syringed well out with weak carbolic acid. A temporary plug of steel was made, the antrum packed with lint, and directions left for syringing.

December 14.—The antrum plug was fitted in, being made solid with pianoforte wire running up to strengthen the post of vulcanite. The antrum was washed out with weak carbolic acid, and a slight discharge of curdy pus noticed; the face being drawn further round to the left side, which suggested facial paralysis.

December 21.—The antrum was washed out, pus still present,

pain being less and the patient having had better nights. On this date facial paralysis was most decided, the patient could not raise the eyebrow or close the right eyelid; at this stage the battery was given and continued for a week or so, but with no good result.

December 28.—The cavity of the antrum was syringed out with weak carbolic acid; a discharge of pus was found to be still present; the wash previously used was now changed to that of boracic acid 10 grs. to water 1 oz.

January 4.—The discharge of pus was found to be less and the pain had ceased. The boracic acid wash being continued.

January 11.—The discharge of pus about the same, and a sample of which was taken away in order to test for tubercle. The patient on this date looking much better in health. (On subsequent examination of the pus no trace of tubercle was found.)

January 18.—About the same amount of pus was noticed, and a stronger solution of carbolic acid was used than that previously, after which, half a drachm of eucalyptus and iodoform was syringed into the antrum.

January 25.—The patient appeared much better, and very little pus was noticed in washing out the antrum, which was insufflated with iodoform, followed by about thirty minims of eucalyptus oil.

From February 1 until the 22nd the antrum was washed out three times a week only with weak boracic acid, and once a week eucalyptus and iodoform was used; the discharge gradually lessened and became very small.

On March 1 there was still a slight amount of pus, and the antrum was syringed out with very weak carbolic acid, followed by eucalyptus and iodoform.

March 22.—No sign of pus could be traced, and the plug was shortened. The patient, however, complained of right frontal pains following the battery which had been given the day before.

March 29.—The entrance to the antrum was found to be closed. The patient did not complain of any pain, and the plug was further shortened. On this date the patient left the asylum, and was asked to write if she had any further trouble, nothing, however, has been heard of her since.

NOTE.—On December 21 the paralysis was present in a

marked degree, so much so that the patient thought that her lower maxilla was dislocated, but on examination the bite was found unaltered and articulation correct. From the commencement of the treatment of eucalyptus and iodoform a great improvement was noticed, and the discharge of pus became considerably less, and as this last condition was brought about so the facial disfigurement gradually disappeared, there was, however, still a trace of it when the patient left.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Coagulants and Non-Coagulants.*

By A. W. HARLAN, M.D., D.D.S., Chicago, Ill.

I HAVE, as occasion offered, presented my views and experiments on the uses of various non-coagulators and coagulators of albumin in the reports of the American Dental Association, the Illinois State Dental Society, the Iowa State Dental Society, before numerous local dental societies in and around Chicago and New York, before the Odontological Society of Great Britain, the Dental Congress at Paris in 1889, and in several dental periodicals of repute in this and other countries, as well as before classes in dental colleges. After all these labours of a dozen years or more, the world is informed that all such statements and experiments are mere "assumptions," not being based on observed or recorded facts. In truth, the reviewer of my work was not able to find anything but an "assumption" as a basis for a quotation like this: "Coagulators of albumin must be kept out of pulpless teeth. . . . No necessity exists for their use in pulpless teeth. Coagulation always prevents diffusion of vapours and vapourisable substances." Or this: "A coagulum is, however, an effectual barrier to the immediate penetration of medicaments into the roots of teeth for the purpose of disinfection, and should not be produced." The author of the paper and also the theory of "assumptions" not only failed to establish this point, but, with the valued assistance of another, failed in his attempted bibliography and then duly thanked the latter for his unrecognised errors!

In addition to this, he reports some very inconclusive experiments more or less irrelevant, which are not "assumptions." They bear the earmarks of pure science. "Assumption" has no place here. The foregoing experiments (see *Dental Cosmos*, March, 1894, pages 181 to 191) led the author, Dr. E. C. Kirk, to the following conclusion: "infer that coagulating antiseptics are not self-limiting barriers to the diffusion of antiseptics other than themselves, when the condition

* Read before a union meeting of the First and Second District Dental Societies of the State of New York, January 8, 1895.

necessary to osmosis are fulfilled." [Italics mine.] Then the author of the above-mentioned experiments, Dr. Kirk, lets himself down very easily by begging the whole question, as follows: "The subject is a very broad one, and difficult to treat even superficially [which was not so difficult before his experiments were made] within the limits of a paper of this character. There is a large field for investigation as to the questions whether coagulation invariably means sterilisation, the extent to which antiseptics and disinfection are produced by coagulants, and how their therapeutic action is modified by the presence or absence of albumin, and especially as to the quantitative relationships of these agents to the amount of infected and decomposing tissue involved. All of these matters are, however, aside from the immediate problem which I have endeavoured to set before you, viz., 'Do coagulants prevent diffusion of antiseptics in the treatment of pulpless teeth?'" To which I answer, they do.

The *piece de resistance* of this paper is the closing exordium, which is meant evidently by its author to hit some one. I will read it:—

"Our system of education is principally a process of mental stuffing. The habit of examining and criticising evidence is nowhere taught except in our law schools, and there only very imperfectly. To accept as true all that established authority says is true, and to store up such statements in the mind by an effort of memory, is the kind of training which principally prevails. And if it be granted that most of the utterances of accepted authorities are true, the power to criticise evidence to determine that which is true or false, and to arrive at just conclusions, is still of far higher value than the mere memorising of facts. But the fault is not alone confined to the cultivation of a habit of accepting statements of truth solely upon authority. It is equally true that things are taught in our schools of which, to say the least, their truth is yet an open question, and upon these doubtful questions it is insisted, more strongly than upon any others, that they should be blindly accepted upon authority."

The discussion following this remarkable paper (printed in full in the April *Dental Cosmos*, 1894) was marked by generous appreciation, but not unquestioned acquiescence. A saving clause for the principal actor of this evening crops out here and there, showing that even a little good may spring from the western horizon. The author, in closing the discussion, says, "We have seen . . . the power of these agents to diffuse entirely through the structure of a root." "It is perfectly possible, on theoretical grounds, to my mind, to fill a root with zinc chloride [this implies that the apex of the tooth is sealed hermetically before the introduction of the zinc chloride] and leave such a dressing in a root long enough to produce chemical irritation of the pericementum by osmosis. I think it is possible to do the same thing with arsenic, in our treatment with arsenious acid or with any other such substance. We want to bear in mind that these materials which we have considered as self-limiting are not so."

Arsenic is not a true coagulator of albumin, hence it need not be here considered. Indeed, there is so much more of value to be considered that I beg your patience for answer to the paper.

As long ago as 1880 my attention was called to the indiscriminate use of the prominent coagulators of albumin—viz., chloride of zinc, carbolic acid, and wood creasote, and incidentally to aromatic sulphuric acid. I had found, by clinical experience, that many pulpless teeth

after being dressed and soaked for days and weeks with the above-mentioned agents, and the roots afterwards filled more or less completely, gave their possessors much trouble. In some cases, where small portions of the pulp had been allowed to remain under root-fillings, either a blind or fistulous abscess was developed. I came to the conclusion that this might have been brought about through the superficial coagulation of non-vital portions of such pulps and the direct coagulation of the exposed inner surface of the animal matrix and contents of the dentine tubes of the tooth. (Infective matter, ptomaines, and cadaveric alkaloids by such superficial coagulation were sealed in the dentine, and afterward the cementum and pericementum were affected by the presence of such *materies morbi*, so as to produce intermittent spasms of irritation, which later produced protrusion of the tooth from its socket, rendering it useless for mastication.) When it is remembered that the glue-yielding portion of the tooth is impregnated with water to the extent of about ten per cent. of the bulk of a whole tooth, and that something like thirty per cent. is organic matter beside, I naturally concluded that there was something radically wrong in the then methods of pulp-canal treatment and sterilization by the use of coagulants. I had, as early as 1874, tried a series of experiments in staining dentine and cementum with various colouring matters—carmine, silver nitrate and others—by first sealing the apical end of a root with wax and paraffin, then placing a drop of alcohol—a coagulant—in the pulp-chamber and canal, and immuring the root in the staining fluid. I found, then, in these experiments, that I was unable to observe the colouring matter pass through the peridental membrane, cementum, and dentine, so as to contaminate the alcohol in the central chamber of the tooth. By reversing those procedures, placing the staining liquid in the pulp-canal and the alcohol on the outside of the tooth, I could not succeed in making the liquids intermingle. Subsequent cuttings for microscopical use failed, in all cases, to show that the alcohol had ever passed beyond the superficial portion which it coagulated. In these experiments I used freshly extracted teeth, and carefully sealed the entrance to the pulp-chamber so that the alcohol would not evaporate. Alcohol is a coagulator of albumin, pure and simple, and when it is largely in excess the coagulum is redissolved as a rule. This, however, is not the case with serum-albumin, in experiments out of the mouth or in the mouth. Example: If a half-drop of freshly extracted blood-serum is introduced into a pulpless tooth in the mouth with the apical end sealed hermetically, and absolute alcohol is applied to it to coagulate it, and afterwards a mat of porous paper soaked in alcohol is placed over the coagulum, and the cavity is sealed with melted paraffin and the whole allowed to remain for a few hours, the coagulum will not be found dissolved. (It is not very easy to perform experiments of this nature.) Even after twenty-four hours the coagulum remains the same in appearance. Contamination from the fluids of the mouth can be prevented by the adjustment of the rubber-dam over the single tooth and gluing it with carbon bisulphide, or by slipping a rubber cap over the dried tooth, moistening the surface with carbon bisulphide and tying it securely with waxed silk. Coagulation with alcohol does not produce a chemical change. From the period mentioned until 1881 I was not able to use other than so-called coagulating agents, simply following the usual routine. About 1874 or 1875 carvacrol and thymol

came into use in dental practice, but neither of these agents were largely used. Carvacrol is a very slight coagulator of albumin, but it will be diffused through the moist dentine in from ten to fourteen hours. Thymol is not a coagulator of albumin ; it will diffuse through moist dentine in from three to six hours at 98.4° F.

I was not able to discover satisfactory agents as disinfectants until the year 1881, when my first paper on essential oils and H_2O_2 was published in the *Dental Register* for December of that year. Since that period I have published numerous papers on the same subject, all of which will be found in the *Transactions of the Illinois State Dental Society*, *American Dental Association*, the *Dental Review*, the *Dental Cosmos*, *Independent Practitioner*, *Transactions of the Odontological Society of Great Britain*, 1888, *Transactions of the Iowa State Dental Society*, *Southern Dental Journal*, Catching's "Compendium," and elsewhere.

Last year the paper read before this union meeting by the editor of the *Dental Cosmos*, Dr. Kirk, averred that all my previous papers were based on an assumption, and that I was the originator or chief exponent of the assumption. Let us examine some of his work to verify or disprove such characterisation.

The question of the penetrability or diffusibility of coagulators of albuminous matter, such as is present in the dentinal tubules and the animal matrix of a tooth, or which is found in blood-serum, seems even at the present time to have provoked a ripple of excitement in the minds of the members of this joint meeting, presented nearly a year ago by Dr. E. C. Kirk. The author of the paper, "On Coagulants in the Treatment of Pulp-Chambers and Canals," departed from his title and limited his observations, first to : "Do coagulant antiseptics produce with albuminous matter a coagulum which is a barrier to the further diffusion of the coagulant or other medicaments?" And second : "Or, as has been asserted, are coagulants self-limiting?" And third : "Do coagulants prevent diffusion of antiseptics in the treatment of pulpless teeth?"

From a reading of the title of the paper one would conclude that the whole subject was to have been handled exhaustively. Such, however, was not the case. It was simply a theoretical question in physics. The author of the paper endeavours to prove that coagulating agents in pulpless teeth are not self-limiting. He goes so far as to say from some experiments (inconclusive) that coagulators of albumin are diffusible. As Dunglison is accepted as authority on definitions, we will see what he says on diffuse : "Diffuse, to spread over a surface or through a mass either by the production of greater tenuity in matter, or by dissemination with force, as with electricity." "Diffusible, *diffundo*, to pour, to pour apart or abroad." "Diffusion liquid, intermixing of fluids or solutions with each other directly." Three agents, commonly known as coagulators, were used in the author's experiments—zinc chloride, carbolic acid, and corrosive sublimate. There is no report on the action of carbolic acid as a diffusible agent, hence we must conclude that the author was not satisfied with its diffusibility through dentine or in egg-albumen. (As a matter of fact, if a five per cent. solution of carbolic acid is poured gently into a tube containing egg-albumen, and the tube is stopped with absorbent cotton to exclude the air and moisture, it will be found that only a superficial film of carbolate of albumin is to be found on the surface of the egg-

albumen. This is explained in this manner : As long as the carbolic acid in solution exerts its affinity for water we will have a carbolate formed ; when this ceases its action is ended. There is no diffusion beyond the concreted, filmal surface in contact with the deeper portion of the albumen. Melted carbolic acid when brought in contact with egg-albumen only exerts a more powerful action in consequence of its greater avidity for water, and in no case is it diffused over, or through, or across the bulk of egg-albumen with which it is brought in contact.) The report on zinc chloride is likewise inconclusive, as no test was made to show that it could be recovered from the so-called coagulum around the root of the tooth through which it was assumed to pass. The report on sublimate, which demonstrated its passage through the tooth-root into the iodide solution, is the only conclusive experiment reported. It was demonstrated after three days. As corrosive sublimate is not a coagulator of serum-albumen, but simply a precipitant, it need not at this time further engage our attention. Globulin, which is found in the animal tissue in abundance, is a coagulable material ; unlike serum-albumin, it is not precipitated by HgCl_2 . The principal value to a dental society in a discussion of this character lies in the utility of the subject-matter discussed. You are not particularly clus- in a subject if it does not produce results which will be con- (see *Dental Cosial* pleading such as was indulged in by the author presented in a spirit March, 1894, page 181), not being written or something can be deduc.instruct, fails in its ultimate object, unless practice.

The history of osmosis is in a manner to produce the impressi;discussed in a grave and reverential remote manner, fix on the mind on that its discussion will, in some diffusion and coagulation are analogous, the auditor that the processes of by such sophistry. The conditions s;to it. We are not to be blinded implanted in its socket are so dissimilar,rounding a root of a tooth parison between the action of a coagulator (that there can be no com- tion and the one where a tooth is suspended of albumin in such a situa- former case the root is covered with a membra in egg-albumen. In the is a definite quantity of moisture and animal ane (peridental). There have no record of temperature, but we have a beat. In the latter we imbibition by the tooth of boroglyceride to satu, positive record of the struum, zinc chloride, carbolic acid, and corros, ivation (in which men- soluble). The inhibition of diffusion under su, ch circumstances is practically nil when a tooth so treated is susp, ed in egg-albumen placed in a test-tube. It will be found that so le, ed in egg-albumen will find water to further dilute it, so long will we t, ng as zinc chloride no longer. Is this diffusion according to the bes, and coagulation, and have? The above is true of carbolic acid, but we, at definition we now the coagulation ceases ; as the affinity which zik, find that very soon water is so much greater than that of carbolic acid, unc chloride has for pronounced. the action is not so

The coagulation produced by the author of the more, nothing less, than the satisfaction of the affini, paper is nothing for water, there being no true diffusion of the drug, ties of such drugs experiments. Zinc chloride liquefied, which is a pow, le in either of his destroyer of tissue, is classed as a coagulator of albu, erful irritant and matter of fact, it is an escharotic and charrer of animal a, nin, when, as a tissue. Dilute

solutions of zinc chloride are coagulators of albumin, egg-albumen, but such solutions do not diffuse through it. This may be proven in many ways. It does not enter the circulation when applied locally in solution or undiluted. It does not spread and permeate the soft tissues; but, on the contrary, it passes in a straight direction from the surface to which it is applied until a sufficient coagulum is produced to prevent its further entrance into the soft tissues. It does not diffuse any farther or it would be found in the circulation. It does not mummify when used in full strength. The so-called hyaline coagulum (Atkinson) is nothing more than an atrophied pulp protected from destruction by anaërobic microbes, by an abnormal growth of the peridental membrane over the apex of the root. When zinc chloride comes in contact with serum-albumin it is destroyed, disintegrated, rendered unfit for food, save for pathogenic micro-organisms (Sternberg). Its action is always local, it does not permeate deeply. If you plant a freshly extracted tooth in plaster of Paris, having sealed the apical end, leaving the pulp *in situ*, and apply liquefied zinc chloride, or fifty per cent. zinc chloride, or twenty per cent., first, you cannot detect it in the plaster of Paris; second, it is not to be found in the cementum or peridental membrane; third, the coagulation of the animal matrix of the tooth leading from the pulp-canal is most superficial. The contents of the tubes do not show under the microscope the characteristic hardening that we find in the use of other agents when the whole tooth is prepared by processes not analogous to Weil's method. (Teeth containing fresh pulps were treated with zinc chloride for four months, and even then it was impossible to discover that the slightest trace of zinc had passed through the sides of the root or even the apex, when the only barrier was the naturally fitted pulp, the body of which was considerably shrivelled, but not wholly hardened after such prolonged exposure.)

It is hardly necessary to say much of corrosive sublimate in this connection, but I will say this: When poisoning takes place with HgCl_2 , the antidote is egg-albumen. If it is a diffusible agent through tooth-structures, why does it not diffuse through the walls of the tooth and produce toxic symptoms? When it is brought in contact with a Herbst pulp-stump, why is it not diffused through the remainder, producing the train of symptoms that mercury is known to produce? As soon as the albuminate of mercury is produced in the stomach, the patient is free from further danger. The reason why large doses of sublimate seldom produce death is that the comparative insolubility of HgCl_2 in water, sixteen to one, produces, first, filmal precipitation of albumin, and second, nausea, which expels the whole mass from the stomach. The administration of white of egg produces the insoluble albuminate of mercury, which is inert, and the patient lives. If, after the albuminate is formed, diffusion took place, manifestly egg-albumen would not be a safe antidote for poisoning by corrosive sublimate. But it is. Workers in bacteriology found that corrosive sublimate was not a good disinfectant, because it precipitated albumin and prevented its further penetration of soft tissues; hence the addition of hydrochloric acid or tartaric acid to prevent such precipitation. If you take an elbow test-tube and fill it nearly full of beef-broth (sterilised), and add a saturated solution of corrosive sublimate to one end and protect the other with cotton wool, the sublimate will not prevent a growth of organisms under the cotton wool, but at the other end no growth takes place. If it is diffusible through albu-

min, why does it not diffuse through the broth and keep the whole contents sterile?

The writer deems it a necessity to present this paper to refute the erroneous impressions left last year by the reading of the paper, "On Coagulants in the Treatment of the Pulp-Chamber and Canals"; he feels that its teachings were so opposed to the facts of pure science that it was a public duty. He also regrets that it was impossible to cover the whole subject of coagulants and non-coagulants, with a practical lesson; but reference to previous papers, elsewhere referred to, must suffice to stimulate the earnest searcher after truth to a re-perusal of them to refresh his memory on this intensely practical subject.

To recapitulate the essence of this paper, I have prepared the following conclusions:—

- (1) True coagulators of serum-albumin are not diffusible when brought in contact with it in a tooth-root.
- (2) Coagulators of the organic matrix of a tooth-root, tube contents (dentine), by the concretions of such albuminous matter prevent the further entrance of such coagulators as soon as their affinity for water is satisfied.
- (3) The destruction of a coagulum in such situations being a foregone conclusion through the agency of anaërobic microbes, brings about a chemical change in a coagulant antiseptic which deprives it of the coagulant property; hence it passes into the circulation, and is excreted as other foreign inert bodies are discharged from different channels.
- (4) The addition of boroglyceride to a coagulant in definite proportions so alters it that it no longer acts as a coagulant; hence it is possible for it to pass through tooth-structure and be recovered from the liquid media surrounding a tooth, when its coagulating property will be restored.
- (5) Non-coagulants soluble in water diffuse readily through tooth-structure, as has been shown repeatedly in experiments out of the mouth, not only in egg-albumen, but likewise in serum-albumin.
- (6) Oleaginous non-coagulants pass through the structure of a tooth quite slowly in the presence of water in serum-albumin, and oils pass through filtering solutions, showing that they displace water. The vapourisable portion of an essential oil will give to a substance which it permeates the characteristic odour in from three to six hours (Watts).
- (7) A non-coagulant disinfectant destroys developed, and deprives the spores of anaërobic pathogenic microbes of the power to be developed; and, as it does not coagulate albumin, it does not prepare a food for the sustenance of any accidental ingress of such developed organisms; hence the future of such teeth treated by non-coagulants is infinitely preferable to the conditions surrounding those treated by coagulants.
- (8) A non-coagulant disinfectant completely sterilises infected dentine by virtue of its diffusibility through it, while a coagulant either precipitates an insoluble barrier or so concretes the albuminous matter with which it comes in contact that it cannot act as a perfect steriliser, but effectually seals infectious and poisonous matters in the dentine, which ultimately have their exit through the cementum and pericementum, depriving both structures of needed vitality.—*The Dental Cosmos*.

Sulphuric Acid and Peroxide of Sodium in the Treatment of Pulpless Teeth.

By F. T. VAN WOERT, M.D.S., Brooklyn, N.Y.

THE object of this short paper is to explain somewhat the details necessary for the accomplishment of results such as I have attributed to the above named drugs ; and in the beginning be it understood that there is nothing to follow which is original with me. The credit, if any, is due to the gentlemen whose names appear in this paper as having introduced these remedies to the profession. Since the introduction of sodium peroxide by Dr. E. C. Kirk, three years ago, I have met with very great success in its use, as well as in making the solution. I seem to have been more fortunate than many others, as I am constantly in receipt of communications stating that the writers have failed utterly in their efforts to accomplish results like those claimed for the remedy. The sulphuric acid which was recommended by Dr. Callahan, at Ashbury Park, last August, I have found so valuable in bringing to light nerve-canals that would never be found were it not for its use, that I embrace this opportunity to spread the glad tidings, with the hope that others may be profited by it as I have. It is generally conceded that one of the most difficult and uncertain operations which we are called upon to perform is that of opening and sterilising roots, and in a great many cases it is utterly impossible to accomplish that end, and the result is the loss of many valuable teeth. Dr. Shields, of New York, claims that this is due to a lack of professional education and manipulation, and makes the absurd statement that he always opens to the end and fills all roots, which you know as well as I do is a mechanical impossibility. It is eighteen hundred and ninety-four years since any one man has claimed such perfection, and I predict it will be as many more before another member of our profession will have the audacity to proclaim himself absolutely perfect, and the rest of us diabolical quacks. My excuse for these utterances will be found on pages 12 to 15 in the *Transactions* of the New Jersey State Dental Society, 1893.

Dr. Callahan recommends a 40 to 50 per cent. aqueous solution, as follows :—" Let us suppose we have an inferior molar tooth in which the pulp has been destroyed ; we adjust the rubber dam, open the pulp-chamber thoroughly, take an old discarded broach, twist a little cotton on the end, bend the broach to a right angle so it will reach well down into the cavity, place the broach into a suitable handle, and by means of the broach and cotton place directly upon and above the dead pulp a drop or two of a 40 to 50 per cent. aqueous solution of sulphuric acid. The solution, by a process of dehydration, will cause the pulp to shrink and toughen so that it can with comparative ease be removed. Now, by means of the broach and cotton, place a drop of the solution over the entrance of each canal. Sometimes it will be necessary to sink a little well or depression at the mouth of the canal to get the acid to stay where it is wanted, being careful to use only round or bud-drills for this purpose.

"Take a No. 5 Donaldson nerve-canal cleaner, bend it to a suitable angle, cut the shank short with nippers so the broach will fit up close to the handle and be rigid and strong ; then with a pumping motion begin to enter the canal slowly and carefully. The acid will precede

or follow closely the fine broach and destroy all septic matter it comes in contact with. Proceed until the patient notifies you of a sensation which is similar to that felt when chlora-percha goes through the foramen ; treat all the canals in the same manner. I say all, because sometimes you will find what appears to be four distinct canals.

"Usually three canals will be found. The posterior root will have one broad canal ; the anterior root will nearly always show what seems to be two canals.

"By this time the solution will be so charged with disintegrated tooth and pulp-substance that it will hide the canals from view. Now, by means of a Dunn syringe, fill the cavity with a saturated solution of bicarbonate of soda ; this, when brought in contact with the acid solution, liberates carbonic acid gas in such quantities that the effervescence will carry all the broken-up tooth and pulp-substance out of the canal, out of the tooth on to the rubber dam, leaving a deposit of bicarbonate of soda lining the whole tooth. This can be removed, if desired, by a little sterilised water, alcohol, or peroxide, either of which will leave the canals white and clean.

"If we desire to make the canals larger, place more acid in them and use a larger broach until the canal is as large as wanted ; then cleanse again with bicarbonate of soda ; dry the canals thoroughly by means of paper points, alcohol, hot air, &c., and you have the cavity and all the canals thoroughly opened, thoroughly clean, thoroughly aseptic, and you can proceed to treat or fill, as you may choose."

I have been using this preparation as described in the above quotation, and find the claims made by Dr. Callahan for it precisely as he has stated, to wit—

1. The operation is perfectly safe, because the action of the acid is self-limiting on dentine.
2. It is a pronounced germicide.
3. The acid acts upon diseased tissue with far greater vigour than healthy.
4. The destroying of the diseased tissue in this way leaves a fresh aseptic surface.
5. An aseptic wound will heal itself in any part of the body if properly closed.
6. Dr. Callahan claims that the acid softens the dentine a very short distance.

In the use of bicarbonate of soda solution the acid is neutralised, in doing which carbonic acid gas is generated in sufficient quantities to carry off the *débris* from the root canals.

Now, do not understand either Dr. Callahan or myself as claiming the use of sulphuric acid and soda bicarbonate solutions to make it possible to open all root canals, but credit us with the conviction that by its use many hopeless cases are mastered, and hundreds of teeth saved which would otherwise be lost.

When you are not successful in your attempts to thoroughly cleanse the canals, place in the pulp-chamber a saturated solution of sodium peroxide and seal the crown from twenty-four to forty-eight hours ; then remove and wash with warm water, after which fill in the usual manner, with the assurance that the majority of cases will not give you further trouble. But to obtain these results it is absolutely necessary that every detail is followed in the making of the solution.

First, the peroxide must be powdered in a mortar, as it is not fine

enough as purchased to add to the water without a chance of spoiling the solution before its completion.

Dr. Kirk explains the cause of this on page 99 of the *Dental Cosmos*, June, 1894, as follows: "If the solution be made hurriedly by the addition of considerable quantities of the powder to the water at one time, the evolution of heat due to the energy which attends the combination produces a rapid elevation of the temperature of the solution.

"This causes a decomposition of the peroxide, a loss of its loosely combined extra atom of oxygen occurs, and the resulting solution is little more than a solution of sodium hydrate, or ordinary caustic soda, which is practically inert as far as bleaching power is concerned.

"To obviate the rise of temperature and consequent decomposition of the peroxide, the solution must be made slowly."

To make this solution, take a common tumbler about half-full of distilled water, place it in the centre of a good-sized pudding-dish, and pour all the cold water around it possible without floating the glass. Add the sodium peroxide in very small portions, about what could be taken upon the point of the large blade of a pocket-knife, dusting it in the water slowly, to cause as little agitation as possible, and this amount should not be added oftener than once in a half-hour, being careful to have the sodium peroxide finely powdered; this to be continued until the preparation begins to look opaque as powder is added. Let it stand over night, and it is then ready for use. This takes several days to make, but it will more than pay for the time consumed in its prompt action as a bleacher and steriliser.

The general impression is that sodium peroxide is for bleaching only, while it is the most valuable preparation I have ever found for the treatment of dead teeth, if used as described before.

The question has been raised as to whether this solution does not disintegrate tooth-substance. I feel safe in saying that it does not, having used it very extensively the last three years without once giving trouble. The preparation can be kept in a glass-stoppered bottle for a long time. It is just as well to keep it in a cool place.

To preserve the powder, screw the top of the can down tight, and run between it and the outer rim a little base wax melted so that it will barely pour. You can remove the top at any time by simply passing the point of a knife through the wax, close to and around the same.

I sincerely hope I have made myself plain in this matter, and that those who read this article will try for the results claimed, as I am sure they will find the addition to their medicament cases very valuable. I am just in receipt of a communication which reports very successful results in the use of peroxide of sodium by a student in the Philadelphia College, after the following method:—Apply the dam, cleanse and prepare the cavity, place in the pulp-chamber a small portion of the powdered peroxide, then flood the cavity with water, allowing it to remain until the agitation from the combination ceases, after which it is washed out and treated as before described. This would seem to me a very practical and sure way of obtaining a solution that would be effectual.—*International*.

An Extreme Case of Angina Ludovici arising from an Inflamed Carious Tooth ; Death while under Operation.

By A. E. PREST HUGHES, L.R.C.P.Lond., M.R.C.S.Eng.

THE patient, aged 31 years, was brought to the Union Infirmary, Fir Vale, having for ten days previously complained of frequent attacks of pain due to a decayed tooth. Two days before admission a swelling under the jaw was noticed, which on the following day grew much larger and in the evening had extended to the front of the neck, and had forced his tongue up so much that he could hardly swallow or speak. When I saw him at the hospital lodge he was in a very distressed condition, only able to whisper and quite unable to swallow, the saliva dribbling from his mouth. The whole of the tissues on the front of the neck were immensely swollen, hard and brawny to the touch, and not pitting on pressure. There was no redness of the skin or signs of pus anywhere. The swelling extended from the angles of the jaw on each side forwards under the chin, and downwards over the front of the neck on to the thorax as far as the upper border of the third costal cartilages. The jaw was immovably fixed and the tongue forced up against the roof of his mouth. His respiration was greatly embarrassed, and the temperature was 103.5° F. He was at once put to bed, and I saw him half an hour later, when he appeared worse than on admission. He was sitting up in bed, breathing with much difficulty, and it was evident that he might be suffocated at any moment. Having explained matters to him and obtained his consent to an operation, chloroform was administered on a piece of flannel stretched over a metal frame. He passed under its influence without much struggling, only two drachms being required to render him unconscious. The inhaler was then removed, and I made an incision through the swollen tissues, commencing at the symphysis of the jaw, and carried it down the centre line of the neck as far as the lower border of the larynx. It was necessary to carry the incision to a depth of between an inch and a half and two inches to cut quite through the affected tissues. The parts were quite pale, very hard to cut, and no pus or discharge of any kind came from the wound. While making subsidiary incisions into the swelling on the wall of the thorax the patient's respiration became still more embarrassed, chest movements continuing, but no air entering the lungs, his face became cyanosed, and the radial pulse became imperceptible. I at once opened the trachea, the operation being rendered difficult from the swollen state of the parts, and introduced a tube. Artificial respiration was begun, and all the ordinary methods of inducing respiration employed, including the passing of a catheter into the trachea through the wound, and the inflation of the lungs through it, together with the injection of ether into the heart muscle, but the patient never made another attempt at breathing, although we persisted for nearly half an hour in our attempts to resuscitate him. Before commencing the operation we had discussed the advisability of performing a preliminary tracheotomy, but decided that incision of the swollen tissues would be sufficient to relieve him. At the inquest the jury returned a verdict of "Death from suffocation while undergoing an operation for cellulitis." No *post-mortem* examination was allowed.---*Lancet*.

Epithelioma of the Tongue in Women.

BY CHAUNCY PUZEY, F.R.C.S.ENG.

SURGEON, NORTHERN HOSPITAL, LIVERPOOL.

As a contribution to the statistics of epithelioma of the tongue attacking women I send a short note of two cases upon which I operated in the summer of 1892. Curiously, both patients were admitted within a few weeks of each other, and they are the only cases occurring in women which have come under my care during twenty years of hospital work.

Case I.—The patient, a woman aged 53 years, had the left side of the tongue (posterior position) extensively affected with epithelioma, and several of the sub-maxillary glands of the same side were enlarged. She was in a very feeble condition from pain and starvation, but urgent in requesting operation. On June 20, 1892, I removed the left lateral half of the tongue close to the hyoid bone. Very little blood was lost, but the patient was so weak that removal of the glands was deferred. For some hours after operation it seemed doubtful if she would rally, but after that she made a rapid recovery. A few weeks later the sub-maxillary region was thoroughly cleared out. For two or three months she improved remarkably, but then disease recurred in the glands at the back of the neck and the case soon ended fatally.

Case II.—The patient, a stout, ruddy, healthy-looking woman aged 59 years, was admitted a few weeks later. She had a large epithelioma involving the middle portion of the right lateral half of the tongue and slightly invading the floor of the mouth, but without glandular enlargement. On July 29, 1892, I removed the right lateral half of the tongue, close to the hyoid bone. She made a rapid recovery. Twelve months later I heard that everything was perfectly satisfactory, and so it continued until the end of last autumn, when disease recurred somewhere in the sub-maxillary region (I did not see her) and she died last Christmas. The operation had given her two years of comfort.

The operation in both cases was that generally known as Marrant Baker's, and the only other point to which I wish to refer is that there was throughout the whole period of the healing of the wound in both cases complete absence of fetor, which I attribute to the hourly painting of the whole wound with glycerine of borax.—*The Lancet.*

An Interesting Case in Practice.

THIS case was presented before the New York Odontological Society, by Dr. William Jarvie, and published in the February issue of the *International Dental Journal*.

"About two years ago a lady called on me, complaining of severe pain in the right superior lateral. The tooth had never been filled, and was then free from decay, yet pain in it was frequent, and it was particularly sensitive to thermal changes. After treatment for some days and the pain not subsiding, I drilled into the palatine surface and applied creosote and arsenic to kill the pulp. After the removal of the pulp, and upon pumping carbolic acid into the canal, I noticed carbolic acid oozing out between the gum and the root upon the palatine surface. Close examination revealed absorption upon that side of the root reaching inward to the pulp. Further examination re-

vealed a corresponding cavity of absorption upon the labial side of the root reaching into the pulp canal. The points of absorption were about one-quarter the length of the root beyond the gum margin. The tooth was treated and filled.

"During the past summer the tooth was broken off, the fracture occurring at the point where absorption had taken place and where the strength of the tooth had naturally become much impaired. I was away at the time, and as the broken part was still attached slightly to the gum, Dr. Turner, my associate, tied it in place to the adjoining teeth with waxed silk until my return.

"This seemed a case for transplantation, as for many reasons it was undesirable for the lady to wear a plate. After failure to secure a suitable natural tooth, I got a lateral with a badly decayed crown, but with a good and suitably shaped root. To this root I attached a porcelain crown that matched the natural one perfectly, but I was perplexed for a time to know how to remove the portion of the root remaining in the jaw, which was firmly held in the socket. Any ordinary means would bruise the gum and possibly fracture the socket, and induce a condition of affairs fatal to a successful transplantation. I finally drilled through the centre of the root, almost to the end, following the canal, with a Gates-Glidden drill; cut a thread in this, and then inserted a screw firmly, pulling out the root by this means without injury to gum or process. I then inserted into the socket the root with artificial crown attached. This operation was performed ten days ago, with what ultimate success time alone can tell."—*The Ohio Dental Journal*.

OBITUARY.

Dr. Alexander Spence.

DR. ALEXANDER SPENCE, whose death occurred on March 13, was a native of Dundee, and was born in 1814. His father was a well-known dental practitioner of Edinburgh, and although Dr. Spence was educated in the first place for medicine, he took up dentistry subsequently at his father's request, and went to reside in Dundee in the early thirties. He held a very good position in society, and had an excellent reputation as a dentist. He took however but little interest in the profession outside his own practice, and was at no time connected with the British Dental Association.

Mr. James Parkinson.

WITH regret we learn, just before going to press, that Mr. James Parkinson, late of 36, Sackville Street, Piccadilly, died on April 6 at Rosenthal, Eastbourne, at the age of seventy-nine.

REVIEWS AND NOTICES OF BOOKS.

HELPS IN SICKNESS AND TO HEALTH, Where to go and What to do, being a Guide to Home Nursing, and a Handbook to Health in the Habitation, the Nursery, Schoolroom and the Person. By HENRY C. BURDETT. London: The Scientific Press, Limited, 429, Strand, W.C., 1894, pp. 484 (19 illustrations).

In the introduction of this book the author states that his aim has been to make a useful book for all classes of the community who have a due regard for health and surroundings. From a survey of the subject matter we think that the object aimed at has been attained, and the volume should prove of great value. Unfortunately but too little is known by parents about the proper care of children. This knowledge is, however, morally necessary, and can, by anyone who requires it, be easily gained from the clear and concise accounts to be found in this book. The reading matter is divided into three parts, of which Part I. deals with Helps to Health in the Nursery, Schoolroom, &c.; Part II., the Treatment and Nursing of Emergencies and Simple Ailments, and Part III., Particulars of all Institutions in England and Wales for the Relief of Sickness or Bodily Infirmary. One naturally turns to the section dealing with the mouth, and although in pages 82 to 84 some practical points in cleanliness of the teeth are given, it would have rendered the book more valuable if the author had laid stress upon periodic visits to the dental surgeon, commencing at the age of 3 or 4. No doubt this fact was overlooked, and will be remedied in future editions. The directions for the alleviation of toothache are meagre, and this part of the subject could with advantage be improved upon. All things considered, the book is a valuable one, and fills a gap in literature too long left vacant.

TRANSACTIONS OF THE WORLD'S COLUMBIAN DENTAL CONGRESS, in 2 volumes. Edited for the General Executive Committee by A. W. HARLAN, M.D., D.D.S., assisted by LEWIS OTTOFY, D.D.S., Chicago. Illinois: Press of Knight, Leonard & Co., 1884.

THESE volumes, amounting to over 1,000 pages of print, contain the full records of the last International Dental Congress. With a few exceptions nearly all the matter has

appeared in the different journals, and has from time to time been commented upon in these columns. Both volumes are well illustrated, and one has not to look far to see that Dr. Harlan has carried out the arduous task of editing in an able manner.

VULCANITE WORK. By HARRY ROSE, L.D.S., R.C.S.E.,
Lecturer on Dental Mechanics at the National Dental College.
J. P. Segg & Co., 289 and 291, Regent Street, W.

THIS small volume contains much that is of practical interest both to the dental student and the practitioner, and emanating as it does from the pen of Mr. Harry Rose, who has for long been an able exponent and original worker in the realm of dental mechanics, will be gladly welcomed as an important addition to the somewhat scanty literature of this special subject. The author's aim is evidently the cultivation of a higher standard of vulcanite work, and the methods by which judicious strengtheners may be introduced are carefully entered into. The various processes for the production of vulcanite plates, both contour and otherwise, are described with clearness and simplicity—indeed with the book at hand any intelligent workman can at once put them into practice. To many the main details are already familiar, but the treatise is so essentially practical and replete with valuable hints that it will be found a useful reminder to all. Mr. Humby's steam swager for making meter metal "trial" and "polishing" plates is fully described, and much useful information is given in connection with gum-section blocks, suction plates, the insertion of swivels, and the method of dealing with shallow bites.

A METHOD OF CLEANING NICKEL-PLATED INSTRUMENTS.—An effective method of cleaning nickel-plated instruments is given in the *Literary Digest*. The articles to be cleaned are laid for a few seconds in a mixture of one part sulphuric acid and fifty parts alcohol; they are then washed with water, and rinsed with alcohol, a linen rag being used to rub them quite dry. This process cleans the nickel perfectly, the yellowest and brownest articles being restored to brightness by leaving them in the acid solution for a quarter of a minute.

MISCELLANEA.

THE BENEVOLENT FUND.—The Hon. Secretary of the Benevolent Fund (John Ackery, 11, Queen Anne Street, Cavendish Square, W.), would be glad at any time to hear from those having employment to offer, either for mechanical assistants, boys, secretaries, housekeepers, or female assistants in the operating room.

THE DENTISTS' REGISTER FOR 1895.—The Dentists' Register for 1895 shows that there are 4,874 registered dentists in the United Kingdom. Of these the majority, 3,479, practise with no special qualification. The new registrations during last year of dental practitioners have been 84. Of those on the Register 1,363 hold a licence in dental surgery; they are distributed among the following colleges as follows:—The Royal College of Surgeons of England, 663; the Royal College of Surgeons of Edinburgh, 133; the Faculty of Physicians and Surgeons of Glasgow, 113; and the Royal College of Surgeons in Ireland, 454. There are eleven doctors of dental medicine of the University of Harvard on the Register, and sixteen doctors of dental surgery of the University of Michigan. The percentage of Licentiates has now risen to 27·82 as against 26·48, 25·43 24·07 of the three previous years. According to the returns of receipts and expenditure in connection with the Dental Register Fund, which have to be presented to Parliament, the amount now due to the General Council stands at £447. In 1892 it was as low as £94, the next year rose to £538, and in 1894 fell again to £342.

THE MEDICAL REGISTER, 1895.—The *Medical Register*, although giving no details regarding the individual beyond the name, the address, the date and place of registration, and the qualifications registered, contains, however, in regard to the profession at large, certain figures of interest. The multitude of registered practitioners continues to increase year by year. In 1879 there were 22,516 registered medical practitioners; in 1894 there were 32,637. Between 1876, which was the first year in which the data for these figures were preserved, and 1879 there was a slight diminution in the numbers, but since

the latter date there has been a steady and uninterrupted increase, till at the present time there are upwards of 10,000 more on the *Register* than there were fifteen years ago. There would, however, seem to be some prospect of a turn in the tide, for the *Students' Register* shows that since 1891 there has been a considerable fall in the number of medical students registered each year, the number entered last year, which was precisely the same as that of those entered in 1892, being smaller than in any other year since 1876. Possibly this has been due to the five years' curriculum; not, apparently, owing to increased strictness of examination, for the ratio between the number of students and of practitioners registered remains nearly the same now as it was fifteen or twenty years ago. Between 1872 and 1875 the number of students registered was 5,208 and in the succeeding four years the number of practitioners registered was 3,941, being 75·6 per cent. of the students entered in the preceding four years. Between 1887 and 1890 in like manner the students were 7,728, against 5,863 practitioners registered between 1891 and 1894, the practitioners being 75·8 per cent. of the students. A steady diminution in the number both of students and practitioners added to the *Register* has been going on in Ireland for many years, while in the other two divisions of the United Kingdom the practitioners have increased; but in all three alike there has been a falling off in the numbers added to the *Register* in 1894, the total in 1893, the highest ever reached, being 1,579, while in 1894 it was 1,426. The number of practitioners removed from the *Register* under Section 14 of the Medical Act, that is, for not notifying change of address, varies remarkably from year to year, suggesting a varying activity at the office rather than any greater or less remission on the part of the profession; the extremes are 29 in one year and 618 in another. Last year only 33 were removed for this cause. Under sections 28 and 29—the penal clauses—twelve practitioners were removed from the *Register* in 1894, more than twice the number removed in any one year before.

THE CARE OF WORKHOUSE CHILDREN'S TEETH. — The following cutting is from the *Birmingham Daily Post*:—"Mr. Dansey (Local Government Board Inspector) has just visited the Burton-on-Trent Workhouse, and, in placing a few sug-

gestions before the Guardians, urges upon them the importance of requesting their medical officer to periodically inspect the teeth of the children." The suggestion we should make is that the inspection should be made by a dental rather than a medical officer.

DEATH FROM CHLOROFORM GIVEN FOR A DENTAL OPERATION.

—An Australian correspondent has forwarded particulars of a death which recently occurred in South Australia from chloroform given for a dental operation. The facts are briefly :—A. T., aged 12 years, had chloroform administered and part of a tooth removed. He then appeared to gain consciousness, but his breathing became irregular, and the pulse stopped. Every means to restore consciousness were resorted to, but without avail. The patient, two weeks previously, had had part of the tooth removed, and since then had eaten scarcely anything on account of the painful condition of the mouth.

THE TREATMENT OF CANCER OF THE JAWS.

—The operative treatment of cancer of the jaws, tongue and lips forms the subject of a valuable communication by Sir William Stokes, to the *Dublin Journal of Medical Science*. As an appendix to the paper a tabular statement is given of 62 cases which have been operated upon by him, and which presented features of the greatest clinical interest. They consist of 24 cases of excision of the tongue, 13 cases of excision of one maxilla, 1 case of excision of both maxillæ, 8 cases of removal of the mandible, 3 cases of tumours of the lower jaw and 13 cases of extensive epithelioma of the lower lip, chin and floor of the mouth. The removal of the maxilla is carried out by Sir William Stokes in a manner similar to that recommended by the majority of surgeons, but in one point he differs from some, namely, in the fact that he never performs a preliminary tracheotomy, nor does he keep "the patient's head hanging well back over the edge of the table during the operation," stating that "such devices appear to be uncalled for, and to add materially to the complications of an operation which without them are sufficiently great."

In dealing with the mandible he does not consider it necessary to divide the red border of the lip. He lays great

stress upon the desirability of a free division of the soft tissues previous to making any section of the bone, and also the fact that arrest of hæmorrhage from the cut mandibular artery can be effected better by plugging the canal with a fine-pointed piece of wood than by the actual cautery. The external incision for cosmetic purposes he makes more below and behind than in front of the ramus of the jaw, and he finds that the minimum of cicatricial deformity is obtained by the use of figure-of-eight sutures.

THE paper, which is very readable throughout, ends with a prophetic statement which, for the sake of humanity, we trust may come true. "In the future it is probable—indeed certain—that some more reliable weapons will be found for attacking cancer than the surgeon's scalpel or cautery. To bacteriological research we look with expectancy and confidence to furnish such weapons, and the search for discovery and destruction of the still perfectly unknown carcinoma micro-organism will be, as von Billroth said, one 'of the greatest tasks reserved for future generations.' "

THE IMMEDIATE REGULATION OF TEETH ABNORMAL IN POSITION.—The immediate treatment of teeth irregular in position has so far not attracted much attention. The method was brought before the dental world by Dr. Bryan in the *Dental Review* in 1892, and at the Columbian Dental Congress Mr. Cunningham read a paper on the same subject. An interesting case illustrating this method of immediate regulation was reported by Dr. Bryan at the meeting of the American Dental Society of Europe. The abnormality consisted in the eruption of the two upper canines within the arch, the temporary canines being retained. The patient, who was 24 years of age, had chloroform administered, the temporary teeth removed, and "parallel perpendicular incisions made with a surgical saw in the engine through the heavy alveolus from the lateral surface along the sides of the roots through and into the alveolus in the palatal portion of the alveolar wall, but only slightly beyond the line of the root." With firm pressure the left canine was brought into place and was found normal in position, but the right on being brought into line was found too long, and was accordingly removed.

the canal filled from the apex, the socket being deepened and the tooth replaced. When seen, seven weeks after the operation, the teeth, which had no retaining apparatus, were alive and healthy and in good position.

ARSENICAL APPLICATIONS.—In the opinion of Dr. Bogue, the separation of the dead from the living part of the nerve does not take place until the seventh or eighth day after the arsenic is applied, while if left until the eleventh or twelfth day putrescence may commence. He states that previous to the eighth day you may amputate or extirpate the pulp, but you will never get the clean separation that is so desirable when arsenic is used. The *Dental Review* for February also contains an article upon arsenic by Dr. Johnson, who finds that of many formulæ experimented with, the following invariably gives successful results:

R. Arsenious acid	gr. xx.
Hydrochlorate of cocaine	gr. xxv.
Lanolin q.s. ft. paste.	

A CASE OF ANKYLOSIS OF A SECONDARY TEMPORARY MOLAR TO THE JAW.—In a note published in this column towards the end of last year upon the implantation of decalcified teeth, a reference was made to a specimen which had come under the observation of Dr. Amoedo of Paris, and which showed apparent ankylosis of the tooth to the bone of the jaw. A full account of this interesting specimen, with illustration of microscopical section, is to be found in the March issue of the *Cosmos*. The tooth in question was impacted between the first bicuspid and the first permanent molar in the mandible of a man 40 years of age. The sections of the specimen were made by grinding and without decalcification or staining, the fixing agent used being Canada balsam. A figure showing a longitudinal section of the tooth and bone is given, and shows very clearly the cementum on the one hand and the osseous tissue on the other without any line of separation, in fact in parts it is not possible to state where one tissue begins and the other one ends. Dr. Amoedo explains this interesting pathological specimen as follows: "By the time that the milk tooth should have disappeared to make room for the second bicuspid it was not shed, and thus became an obstacle to the

normal development of the second bicuspid, that remained imprisoned in the thickness of the maxilla. The second bicuspid was unable to break through the wall that was in the way of its passage and consequently the tooth played the part of a foreign body irritating the bone; which irritation produced an over-excitement of the activity in that region and ended in the resorption of the tooth in evolution and of a great part of the roots of the milk tooth. The cause of the irritation having disappeared, a very compact bone, rich in osseous corpuscles, filled the hollow left by the second bicuspid and the bays upon the surface of the roots."

AMAUROSIS CONSEQUENT UPON SUPPURATION OF THE MAXILLARY SINUS.—An interesting case of suppuration of the antrum, giving rise to amaurosis, is quoted in the *Medical Week*. The antral suppuration was of dental origin, and led not only to amaurosis of the affected side, but also to exophthalmos. The patient, in spite of surgical intervention, succumbed to a meningo-encephalic affection, the autopsy disclosing the fact that a communication had been established between the brain and the orbital cavity by perforation of the floor of the orbit, this perforation being situated in the lesser wing of the sphenoid. The amaurosis was accounted for by compression of the nerve-trunk behind the optic foramen caused by infiltration of embryonic cells into the two sheaths surrounding this nerve trunk. The result was, consequently, a sort of Wallerian degeneration of the nerve, determined by this perineuritis.

THE RELATIVE EFFICIENCY OF DIFFERENT ABRASIVE WHEELS.—In an article to the *Scientific American*, Mr. C. M. Jenks gives the details of tests made into the comparative efficiency of the different abrasive wheels, and as a result places them into the following order:—Diamonds; North Carolina corundum; North Carolina and Georgia corundum; Chester, Mass., corundum; Turkish emery; Bengal corundum; Naxos emery; Peekskill emery; garnet (best North Carolina); carborundum; preparations of crushed and chemically prepared steel grains; best flint, quartz crystals and ordinary garnet; common quartz, flint, buhr stones, sand, &c. He is not at all convinced that a wheel made of

pulverized diamonds would do the rapid and continuous cutting that a pure corundum wheel would do. For, in his opinion, like carborundum it might prove in practical use of poor efficiency and economy.

THE APPLICATION OF THE RUBBER DAM TO TEETH WITH DEEP CERVICAL CAVITIES.—The application of the rubber dam to teeth with cavities running below the gum margin, cannot as a rule be successfully carried out by the ordinary method of ligature. A correspondent informs us that in these cases he finds the following plan admirable where the approximal tooth is present: "First pack down a pledget of cotton wool, this dries up some of the saliva and carries the rubber a trifle further down; then warm a piece of temporary gutta-percha, oblong in shape, and with two instruments pack it down at the cervical edge, this carries the rubber down and effectually stops any leakage, trim off the surplus gutta-percha to the edge of the cavity with a double-ended spatula."

MENTAL DISTURBANCE FROM IODOFORM.—The *Lancet*, dated March 30, contains an abstract, taken from the *Neurologisches Centralblatt*, of a curious case recorded by Dr. Oldenburg. A female patient, aged 51, who had suffered from epileptic attacks from the age of 20, but in the intervals between the attacks had been quite healthy and not psychically peculiar, injured her hand in a fit and was treated with a ten per cent. iodoform ointment. Twelve days later she became excitable, restless and confused, and by and by had hallucinations. The urine gave a distinct iodine reaction. When admitted to hospital she talked incessantly, would not answer questions, could scarcely be kept in bed, and complained of plots and persecution. The restlessness increased, and the patient became cyanotic; the urine contained albumen, but gave a very slight iodine reaction. She then remained quiet for a few days, but became again demented, after which she had another period of quietude followed by another outbreak which, however, subsided, so that she was then able to be discharged. Dr. Oldenburg thinks the condition cannot be regarded as a post-epileptic mental disturbance, because of the interval that elapsed between the last attack and the onset of mental symptoms. He thinks it was determined by

the iodoform poisoning acting upon a nervous system predisposed by epilepsy to grave disturbance.

DERMATOL AS AN ANTISEPTIC.—Dermatol (basic gallate of bismuth) is said by O. Wiemer to be superior to all other antiseptics in inducing union of the edges of wounds and not producing any inflammatory symptoms. Care, however, must be taken in its use, as it may cause symptoms of bismuth poisoning.

PRESIDENCY OF THE ROYAL COLLEGE OF SURGEONS.—At a meeting of the Council of the Royal College of Surgeons in England, held on Thursday, April 4, Mr. Christopher Heath was elected President in succession to Mr. J. W. Hulke.

DENTAL HOSPITAL OF LONDON.—Mr. Henry Harben, J. Esq. has in addition to £500 already contributed by him, generously promised a further munificent donation of £1,000 towards the amount required for building the new Dental Hospital in Leicester Square conditionally upon a sum of £13,000 being contributed by the public within reasonable time, and which will enable the Committee to commence the building.

GUY'S HOSPITAL DENTAL SCHOOL.—It is generally known that when this School was started there was an arrangement that the constitution of the School would be reconsidered after five years. This period has now elapsed, and the success attending the development of the School having exceeded all expectations, it has been placed upon a permanent basis. Mr. W. A. Maggs and Mr. J. H. Badcock have been appointed to share with Mr. Newland-Pedley the position of dental surgeon to the Hospital; and Messrs. Rouw, Pillin, Mansbridge, Richards, Baker, Butcher, Hopwood and Stoner, remain assistant dental surgeons, as heretofore.

THE ODONTOLOGICAL SOCIETY OF SPAIN.—We glean from the columns of the *Cosmos* that a Dental Society has recently

been formed in Spain. The president is Mr. Portuondo, a gentleman who is earnestly working to urge the Government of his country to enact a reform in dental education. The other officers are Mr. H. Highland, vice-president; Mr. Florestan Aguilar, secretary-general; Mr. Carlos Garcia Velez, recording secretary; Mr. Enrique Headdy, treasurer.

EDINBURGH DENTAL STUDENTS' SOCIETY.—The eleventh annual dinner of the above Society was held in the Imperial Hotel, Edinburgh, on Friday evening, March 8. In the unavoidable absence (owing to illness) of the Honorary President of the Society (Dr. Macdonald Brown, F.R.C.S.), the chair was taken by Mr. W. Bowman Macleod, L.D.S., F.R.S.E., the Dean of the Hospital. There were present about seventy gentlemen. The menu-card was, as usual, profusely illustrated with sketches having reference to the profession, and was designed by Mr. F. Page, L.D.S. One of the most amusing of the sketches was a full-page illustration on the back portraying a man in the operating chair, attended by two lady dentists (one young and the other decidedly otherwise). The younger lady is pressing the claims of "gas," whilst the elder is holding a bottle of chloroform, evidently recommending the latter, whilst the patient is soliloquising thus to himself, "How happy could I be with e(i)ther were t'other dear charmer away." During the course of the dinner "haggis" was partaken of, accompanied by the strains of the bagpipes. After the usual loyal toasts, "The Edinburgh Dental Students' Society" was given by the Dean, and responded to by Mr. J. Malcolm, L.D.S., the President for the coming session. "The Incorporated Edinburgh Dental School" was proposed by Mr. Oswald Fergus, L.D.S., of Glasgow. "The Edinburgh Medical Schools" was given by Mr. J. S. Amore, L.D.S., and responded to by Dr. Miles, lecturer in anatomy at Minto House. "The Guests" was proposed by Mr. T. R. D. Walkinshaw, and "The Chairman" by Mr. C. Wood. An enjoyable evening spent with songs, recitations, music, &c., was brought to a conclusion by the singing of "Auld Lang Syne" about midnight. The following gentlemen contributed to the programme: Messrs. A. Wilson, L.D.S., D. Monroe, L.D.S., Carr, Bell, Markham, Lightfoot, Shennan,

Routledge, M. Stewart (mandoline), and Nash (violin), and of the Hospital, and Messrs. Dale, Evans, Hopekirk, Weightman, Daish, Imrie, and Alexander, friends of the members.

Moscow will be the meeting-place of the International Medical Congress to be held in 1896.

NEW DENTAL PUBLICATION.—A new publication, under the name of the *Dental Weekly*, has made its appearance during the past month. It is stated to be an independent journal devoted to the interests of the dental profession.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Type-Writing.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION"

SIR,—It has occurred to me that many of your readers may have like myself, wished to know of someone who can type-write their work without making havoc with the scientific words. I have had some work of this kind done for me lately by Miss O. H. Taylor, 19, Southampton Buildings, W.C., without any mistakes, which will surprise anyone who knows my handwriting. Other friends have had a similar experience. Thinking the information may be useful, venture to ask space for it.

Yours, &c.,

26, *Wimpole Street*,
March 25, 1895.

ARTHUR S. UNDERWOOD.

The Regulating Chloroform Inhaler.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION"

SIR,—We thank you very much for having given in your January number a notice of our new form of regulating inhaler, to which our attention has only now been directed.

The directions for giving the chloroform in small, continuous, and gradually progressive doses are correctly given. We are, therefore, all the more surprised that a doubt should be expressed, without giving a reason for it, of its ability to completely abolish the manifold dangers of chloroform administration, all of which are the result of an overdose having been accidentally administered by the uncertain and

unsafe methods usually employed in its administration. These dangers, we maintain, can be prevented with knowledge and absolute certainty by the use of our inhaler, for the reason that it gives perfect control over the chloroform, assures the patient automatically his due supply of air, makes it easy by a true index of the respiration of observing and accurately estimating the condition of the patient's breathing during every stage of the administration, and thus the administration and intake of an accidental overdose, the sole cause of fatalities under chloroform, is effectively guarded against.

We know from Snow that 18 minims of chloroform gradually absorbed in the course of four or more minutes produce the third degree of narcotism in which surgical operations are usually commenced, which degree answers equally well every purpose of anæsthesia in dental operations; that 24 minims absorbed induce the fourth or deepest degree of narcotism, which is only required for reducing dislocations of old standing; and that 36 minims of chloroform are required to be present in the blood to arrest the respiration.

We have no doubt that every dentist may be safely entrusted with the gradual dispensing of 18 minims of chloroform in the space of four or more minutes from 2 drachms of the drug in the inhaler. But if he should fail to have perfect confidence in the truth of Snow's teaching, he is advised not to charge the inhaler with more than from 20 to 30 minims, when for obvious reasons his patient cannot absorb the 36 minims required for arresting the respiration. Thanking you in anticipation for inserting this letter in your next issue,

We remain, Sir,

Yours most respectfully,

March 21, 1895.

KROHNE & SESEMANN.

Dentists by Vocation, or Dentists by Expediency.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—I have perused your article on "Dental Surgery in the Cape of Good Hope" with feelings of amazement—indeed, I quite doubted the evidence of my senses, and pondered over it several times before I could satisfy myself that I was not dreaming. As I have no doubt that your article will be tackled by eminent members of the profession responsible for the passing of the Dentists Act of 1878, I shall be content for the present with dissociating myself from the views expressed in the article to which I have referred—particularly to your devoutly-wished-for consummation.

Yours faithfully,

JOHN O'DUFFY, L.D.S., R.C.S.I.

54, Rutland Square, Dublin,

April 3, 1895.

BOOKS RECEIVED.

VULCANITE WORK, by Harry Rose. *London*: J. P. Segg and Co., 289 and 291, Regent Street, W. Price 2s. 6d., pp. 63, illustrated.

TRANSACTIONS OF THE WORLD'S COLUMBIAN DENTAL CONGRESS. In Two Volumes. *Chicago, Illinois*: Press of Knight, Leonard and Co., 1884.

The Dublin Journal of Medical Science, The Derbyshire Courier, Birmingham Medical Review, Vierteljahrsschrift für Zahnheilkunde, The Transactions of the Odontological Society of Great Britain, The Dental Record, The Pharmaceutical Journal, The Medical Press and Circular, The Chemist and Druggist, L'Odontologie et la Revue Internationale d'Odontologie, The British Journal of Dental Science, Dominion Dental Journal, Deutsche Monatsschrift für Zahnheilkunde, Revue Internationale de Bibliographie Médicale, Revue Internationale de Médecine et de Chirurgie Pratique, Transactions of the Guy's Hospital Dental Society, The Dental Cosmos, The Western Morning News (Plymouth), Le Monde Dentaire, The International Dental Journal, The Evening Telegraph, Medical Reprints, The South Australian Register, Guy's Hospital Gazette, The Dental Weekly, Items of Interest, The Ohio Dental Journal, Revue Odontologique, La Odontologia, Le Progres Dentaire, The Dental Register, The Dental Digest, Transactions of the Students' Society of the Dental Hospital of London, Odontoskop, The Dental Review, The Students' Journal (Liverpool Dental Hospital), The Devon and Exeter Gazette, C. Ash & Sons' Quarterly Circular.

Letters and other Communications received from:—

J. P. Segg and Co.: J. F. Pink; T. R. Wilkinshaw; T. H. Clarence; Bowman Macleod; W. S. Nowell; W. A. Maggs; Krohne and Sese-mann; C. Carter Braine; P. Crank; G. Brittan; T. A. Goard.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 5.

MAY 15, 1895.

VOL. XVI.

Museums for Teaching Purposes.

FROM very early times it has been the custom to collect interesting objects of nature or art for the instruction of students or to gratify the tastes of the curious, and it is difficult to conceive a better method of conveying knowledge and of giving opportunity for consistent study in any branch of learning than by the formation of a museum of the objects connected with the subject to be learnt.

The Natural History department of the British Museum at Kensington affords to the student of natural history opportunities for assimilating knowledge in that subject that can only be fully appreciated after frequent visits. In many of the departments the collection is remarkable, and reflects the greatest credit upon its Curator, Sir William Flower, while it has also enabled many a student to pass successfully a dreaded examination.

The British Museum in Great Russell Street, in its turn, offers to the art-seeking student opportunities that cannot be surpassed in any other country, for the department of Greek art is the finest in the world.

Museums for teaching purposes are to be found connected with all seats of learning. We find at our older Universities, the Ashmolean, perhaps the oldest in Great Britain, the Fitzwilliam, the Geological and others connected with the special sciences. To come even nearer home we have that very excellent museum at the College of Surgeons, and the museums in connection with the various London hospitals, some of which are most valuable and replete with opportunities for the diligent student to learn the various subjects of his examinations. The Odontological Society Museum, containing as it does very many valuable and unique specimens (although on account of the paucity of space at its disposal the contents are not well displayed), is open to the diligent student who may be pursuing investigations in dental pathology.

We are glad to see that the school in connection with the Dental Hospital of London has recently started a teaching museum for the use of its students, thus giving them the opportunity, when reading their books, of actually seeing the specimens about which they are reading.

The whole value, however, of a teaching museum depends upon the care exercised in the choice and arrangement of the various exhibits. The number of specimens should not be too great, they should be typical of the point they are intended to illustrate, and should be arranged, if possible, hand in hand with the various text books in use. Each exhibit should have attached to it a short description—in fact, the ideal collection should be of such a character that the student ought to be able to learn his subject to a great extent by its aid.

There is not a subject in the dental curriculum that would not be benefited by cases of specimens illustrating its various manifestations ; with such museums learning would become a pleasure and cease to be a toil. It is to be hoped, therefore, that the day is not far distant when such collections will be found in connection with all our dental schools.

At the time our Association met in Dublin, Mr. Booth Pearsall by his energy and determination demonstrated most successfully the value of a museum, and many of us must remember with gratitude the opportunity then given of seeing many useful, instructive and valuable specimens.

ASSOCIATION INTELLIGENCE.

The Annual General Meeting.

PAPERS AND DEMONSTRATIONS.

MEMBERS wishing to read papers or give demonstrations at the annual meeting, are asked to send in their names to the Hon. Sec., 40, Leicester Square, London, W.C.

MICROSCOPICAL SECTION.

PRELIMINARY NOTICE.

President : J. HOWARD MUMMERY.

President-elect : A. S. UNDERWOOD.

A FURTHER discussion on "The Pathology of the Dental Pulp" will take place at the Edinburgh meeting, and members generally are invited to give short communications in connection with this subject. Members desirous of reading papers, giving demonstrations, or exhibiting microscope slides and photo-micrographs, are requested to communicate with the President at 10, Cavendish Place, W.; or the Hon. Secretary, A. Hopewell Smith, Lindum House, Boston.

Metropolitan Branch.

AN ordinary meeting was held at 40, Leicester Square, on the 24th ult., Mr. E. Lloyd-Williams, President, in the Chair.

The minutes of the Annual General Meeting having been read and signed, the PRESIDENT announced that Messrs. Baldwin and Matheson had written to say they were unavoidably prevented from attending and making their promised communications that evening. He called upon Mr. Badcock for his communication.

Mr. BADCOCK read notes on a Case of Marked Discolouration in an Incisor containing a living Pulp (which appears as an Original Communication).

Mr. W. R. HUMBY asked if the tooth were knocked out, to which Mr. Badcock replied that it did not come out, but was pushed to one side. Mr. Humby then related a somewhat analogous case, in which he had drilled into a tooth for a doctor. He thought partial death of the pulp had taken place, namely, at the crown.

Mr. BADCOCK said that in his case the whole of the pulp was alive.

The PRESIDENT thought the case raised two very interesting points—what was the precise nature of the discoloration? Various tints were to be met with, from light blue to black. What was the black pigment which was occasionally taken out? The other question was—did Mr. Badcock take any steps to bleach the tooth, and if so, how?

Mr. W. HERN had seen a case somewhat similar, which was due to a hunting accident. One central incisor was smashed off and the other one loosened. It became discoloured, and fracture being diagnosed, the tooth was extracted. It was found that only about one-seventh was broken off, high up, but this led to the pulp bleeding and the discolouration.

Mr. R. D. PEDLEY thought the case showed the difference that existed in the pulps of teeth. Some teeth required the application of arsenic many times, and extensive violence might only lead to partial death.

Mr. J. H. REINHARDT said that Mr. Badcock had done what he (the speaker) and others would have done. He described an injury which occurred to his own incisors thirty years ago. The teeth were replaced in position and remained firm for many years. He had used chloride of zinc for bleaching, but he had no recent experience upon the subject.

Mr. H. G. READ said that the President had alluded to the question of bleaching, and he (the speaker) had an experience of that operation. He once saw chlorine used in the case of a discoloured central incisor in a nurse, and he remembered that the only result was the production of a severe laryngitis.

The PRESIDENT narrated his own case. Whilst skating, he knocked the two central incisors within the arch; they were pushed back again, one being discoloured.

Mr. BADCOCK, in reply, said he did not know what the black substance was referred to by the President, and that he never bleached teeth. He recommended the thorough preparation of the cavity, and lining the wall with a thin layer of cement.

The PRESIDENT then called upon Mr. A. E. Baker, who read a communication upon some cases of alveolar abscess, in which the tooth pulps were found to be alive. The paper is published elsewhere.

Mr. BADCOCK said that for a very long time he had been sceptical as to whether an acute abscess could arise with the pulp remaining alive. But from several cases (one of which he mentioned) occurring in his own practice, and those which others had mentioned, he no longer doubted their occurrence. He detailed a case of a right upper molar with an acute abscess over it. On drilling into the tooth it was found to be very much alive, and required more than one application of arsenic. As to the pathology of such cases, he could only say he did not know what it was, but alluded to the question of "partial abscess of the pulp" as suggested by Mr. Baker.

Mr. HUMBY said he had had at least two cases like Mr. Baker's, one was that of a gentleman with an abscess over a buccal root, which seemed to have loosened the wisdom tooth next to it.

Mr. READ asked whether it was not possible that a small splinter of bone had not been left behind after the extraction of another tooth? He had seen cases where swellings were apparently connected with teeth occurring in consequence of accidental vaccination of the cheek, ulceration of the eyelid, and the slight wounds on the face caused by the razor in shaving.

Mr. REINHARDT suggested that rheumatism might be a very likely cause of abscesses arising around the roots of teeth with live pulps. In each of his own cases he had noticed this.

In reply, Mr. BAKER said that he had nothing further to say about Mr. Badcock's case beyond what he had previously mentioned. The two were very similar. He was sure there was no pyorrhœa in either of his cases, as suggested by Mr. Humby, and spicules of alveolus must be excluded, there having been no extraction anywhere in proximity to these teeth. With regard to these abscesses being caused by rheumatism, he considered that rheumatic dental abscesses were generally limited to one root, and appeared not at the apex, but more towards the gum line. Mr. Read's cases were very interesting, but their causes must be eliminated from the two cases in question, there being no exterior lesion in either to account for the abscesses.

The PRESIDENT next called upon Mr. R. Denison Pedley, who brought forward a case of periodontitis with alveolar abscess following influenza.

The PRESIDENT mentioned an interesting case of a young lady who suffered every spring with abscesses over the lower incisors.

Messrs. BAKER and HUMBY also mentioned similar cases in connection with influenza.

The PRESIDENT presented a model of a case which came under notice that morning at the hospital. It showed a redundancy of teeth in the incisor region, and it was difficult to tell which were normal, geminated, and supernumerary teeth. He called attention to the smoothness of the model, and stated that this was due to the addition of gum to the alum water in mixing the plaster. In reply to questions from Messrs. Robbins and Badcock, the President said the proportion was one drachm of office gum to five ounces of a saturated solution of alum coloured with cochineal.

Mr. HUMBY asked whether it had been tried through the vulcaniser, and if so, was it affected? With reference to the model, he asked whether there were any signs of cleft palate, uvula or hare lip, and quoted Mr. Bland Sutton on the question of redundant lateral incisors.

The PRESIDENT replied that vulcanisation had no bad effect upon the plaster mixed in the manner he had described.

He announced that the Council hoped to make arrangements to hold the next meeting in June, with a strong list of demonstrations.

Southern Counties Branch.

A MEETING of this branch was held on Saturday, April 27, at the General Dispensary, Brighton.

Amongst those present were the following gentlemen :—Mr. J. H. Whatford (President), Dr. J. Walker (President-elect), Messrs. H. Beadnell Gill (Vice-President), J. H. Redman, W. Harrison, J. Dennant, J. Wood, J. N. Stoner, A. Roberson, T. H. Elliott, D. E. Caush, W. R. Wood, F. V. Richardson (Brighton), S. J. Hutchinson, Lawrance Read (London), G. Brunton (Leeds), W. Burton, J. C. Foran, Ridley Herschell (Eastbourne), M. Henry (Folkestone), C. Foran (Southsea), A. Gabell, F. H. Ellwood (Redhill), W. T. Trollope, F. Bell (Tunbridge Wells), and others.

The following gentlemen gave demonstrations :—

T. H. ELLIOTT, L.D.S.Glas. : "Gold filling in an upper lateral incisor, using a matrix."

RIDLEY HERSCHELL, L.D.S.Eng., gave a demonstration of a method of attaching gold crowns by means of a screw and nut, a brief outline of which is as follows. A gold collar was fitted in the ordinary way. The pulp chamber was deepened and enlarged so that the floor was quite flat and the sides slightly diverging. The collar having been placed on to the root, gutta-percha was packed down tightly,

filling the collar. Into the gutta-percha the patient was allowed to bite, so that an impression of the opposing teeth was obtained. The collar was then removed with the gutta-percha *in situ*, an exact impression of the enlarged pulp chamber being thus gained. After a cast and over-bite had been made the gutta-percha was removed, leaving a *facsimile* of the root with the collar in position. A piece of platinum plate was then fitted to the model, so that it exactly filled the floor of the pulp chamber, and into the centre of this, and perpendicular to it, was screwed and soldered a portion of platinum pin wire, into which a screw thread had been cut. After the crown was made a hole was cut in the top so that when placed on the model the pin would protrude exactly in the centre. Into the thickness of the top of the crown a depression was now cut just deep enough to allow for the thickness of the nut, which filled the depression exactly. The flange of platinum, with pin attached, was then fixed into the root with amalgam, and allowed to remain until the amalgam was hard. The crown was then filled with cement and pressed on to the tooth, after which the nut was screwed home and the projecting end of the pin cut down flush with the nut.

D. E. CAUSH, L.D.S.I., gave a microscopic demonstration, showing specimens of exostosis, alveolar abscess, enlargement of pulp canal, cemental tissue in pulp canal, &c.

The Members dined together afterwards, when £4 6s. 6d. was collected for the Benevolent Fund.

THE ANNUAL MEETING will be held on Saturday, June 22, 1895, at Salisbury. Gentlemen willing to read papers or give demonstrations are requested to communicate with the Hon. Sec.

Nominations for the Council must be forwarded to the Hon. Sec. by June 15.

The retiring Councillors, Messrs. A. Gabell, J. H. Reinhardt, G. O. Richards, and John Wood are not eligible for re-election.

F. V. RICHARDSON,

1, Sillwood Road, Brighton.

Hon. Sec.

Irish Branch.

BY kind permission of the President and Council of the College, the Irish Branch met on Monday, April 29, at the Royal College of Surgeons, Dublin, the President, Dr. Arthur Baker, in the chair.

There was a good attendance of members, including Messrs. T. A. Biggs, S. T. Bishop, D. Corbett, D. Corbett, junr., Goldie, Murray, J. O'Duffy, K. E. O'Duffy, P. O'Meehan, Smith, R. T. Stack, F. O. Stoker, J. S. Thomson, J. S. Tucker, C. Wall, H. Williams and G. W. Yeates.

Dr. Baker then read the following address :—

PRESIDENT'S INAUGURAL ADDRESS.

GENTLEMEN,—To return you my sincere thanks for the honour you have conferred on me by electing me your president is my first and most pleasing duty ; at the same time I cannot but feel that I am but a poor substitute for your late president, who has discharged the duties of his office with so much advantage to the branch, and credit to himself. However, with his example before me, I hope to do what lies within my power to further your interests in every way, and with your loyal co-operation to keep up the reputation of our Irish Branch.

It has been the custom for your president to address you on the occasion of our first meeting, and I think I shall best consult your wishes by making that address as brief as possible in order that the more time may be left for the matters of greater interest which follow. From the constitution of our Association our object in banding ourselves together seems to be a twofold one : (1) To assist in carrying out the provisions of the Dentists Act ; (2) to interchange information on subjects relating to the practice of our profession. Your Council, aware of the importance of carrying out the provisions of our Act, have not been unmindful of their trust, and have held many meetings in which they deliberated carefully on the best means of giving it effect. And while it seems a simple matter to point out violations of the law, it is anything but an easy task to bring offenders to justice. We have had a list prepared of those persons, both in Dublin and the provinces, who have infringed the Act, and thought it best at first, if possible, to secure a conviction in Dublin before taking a case into one of the county courts. Accordingly a case was prepared and sent up to the executive of the Association in London, in order that they should take the matter up and prosecute. For, as you are doubtless aware, it is the parent Association that appears as plaintiff in these cases, not the branch. The result of sending this case to London was that the Irish Branch was complimented on the clearness and completeness with which the case was prepared, it being one of the best which the London executive had ever received. And I think it only right to say that this was largely, if not entirely, due to the energy and self-sacrifice of our honorary secretary, who spared no pains in getting together the necessary evidence. When the case was brought forward in court we obtained a conviction, as you already know, which will be of considerable importance to us in any future case which we may have to undertake. I shall not further anticipate any remarks which our secretary most likely will make on this subject in giving you a report of his work. However, I think I may add that although it may appear to some that the Council have acted slowly, and perhaps have not done quite as much as they might

have done in prosecuting offenders, that we are not by any means asleep, but are wide awake to all that is going on. An unsuccessful prosecution, especially at first, would be a great misfortune to us, consequently, knowing the proverbial uncertainties of law, we thought it wiser to be perfectly certain of our case before attempting action.

While the political or judicial side of our Association very properly occupies a large share of our attention, we must not allow it to engross it to the exclusion of progress towards a higher standard of work, which is of equal, if not of greater, importance, if we really wish our profession to occupy its right place among the callings of men. If we ask ourselves the question, how is it that all professions have received such an impetus, and made such strides during the last fifty years, will not the answer be found in the wider diffusion of information and in the co-operation of many workers? To a great extent this is brought about by the periodical meetings of those interested in their special work. I need only instance the results of the British Association, the British Medical Association, the British Dental Association, and the various congresses for scientific purposes both at home and abroad; they show us that in order to assist in raising the edifice of the sound and scientific practice of our profession, all must be willing to work; each of us can do something; no stone is so unimportant that it will not occupy its own corner in the building. We all have opportunities for observation—let us use them. In our own little society let it be the aim of each one to contribute at least one paper during the year. Men are apt to forget that it is often by the grouping together of what are apparently trivial cases that we are enabled to throw light on those problems which confront us in every-day practice. Details of technique, unusual specimens, incidents of practice—all are of interest. A communication need not of necessity be on an abstruse scientific subject. A brief and accurate statement of facts is worth many theories, and in default of other matter there are few methods of treatment so well established that will not bear discussion and viewing from a new standpoint.

In thus urging these reflections on you, I may appear to ride my own hobby perhaps a little too far, but I trust you will forgive me, and believe that in making these remarks I am actuated solely by the wish to see our branch a thoroughly healthy one, in which the aim of each individual member will be to contribute something towards our common fund of information, so that we all may derive benefit from our meetings. You have often heard that example is better than precept, so rather than anything I have said let me point to the example of one of our honorary members, who has supported us right loyally by coming over from Glasgow to be present at, and to contribute to, our meeting. Let not such an example be thrown away, but rather let us resolve by our industry to make the coming year a record one for the Irish Branch.

After the President's inaugural address, the Hon. Secretary presented his report, showing the work of the branch for the previous year.

HON. SECRETARY'S REPORT.

MR. PRESIDENT AND GENTLEMEN,—Although it has not hitherto been the recognised practice, it has been considered advisable to establish the precedent of presenting to the members a yearly report of the work done by, and the general progress of, the Irish Branch of the British Dental Association.

Since the beginning of the year 1894, the branch has held three meetings, and besides the transaction of necessary business, has heard and discussed many communications of much scientific and professional interest.

During this period your branch has received the accession of eight new members, and also done itself the honour of adding to its small list of honorary members the name of J. Austen Biggs. You have lost one member through death—your esteemed and respected ex-president, J. C. Clark.

After two years' tenure of office, marked by many services to the Association and branch, your late president has given place to one at whose hands you have every confidence the honourable traditions of the post will be fully maintained.

You have also lost, with regret, the services so long and ably rendered, of your late Hon. Treasurer, and all will hope it may be many years before this paragraph is repeated in an Annual Report.

Your Council also has had a considerable accession of new blood at the last election.

Your Council has met four times, and considered and acted upon some of the most important matters which have ever come before it. The most notable result of their deliberations has been the successful prosecution of Levey for violation of the Dentists Act. Your Council are now considering a number of apparent breaches of this Act, both in Dublin and the provinces, with a view to taking action, in which their hands will be very much strengthened by the judgment in the above case.

In spite of a satisfactory correspondence on the subject with Alexander Thom and Co. some eighteen months ago, the names of a number of unregistered persons still appear with the title of "Dentist," "Dental Surgeon," &c., in the Post Office Directory. Your Hon. Secretary has communicated with Thom and Co. again about it, and received an assurance that this will not occur any more.

The names of four deceased persons appearing upon the Dentists' Register have been communicated to the proper quarter for removal.

A motion of Mr. J. O'DUFFY, "To secure the publication of the proceedings of the branch meetings in the daily papers," was discussed at

some length, Messrs. Williams, Stack, Thomson, Wall, Biggs and Murray taking part in the debate, an amendment by Dr. Stack being ultimately carried on a show of hands, which provided for the reporting in full of the branch meetings, not necessarily for publication in the lay press.

"Casual Communications and Incidents of Practice" brought out a number of highly interesting cases.

Dr. STACK showed, in the mouth, a gold and porcelain crown, easily removable for repair; also a modification of Mr. Hewitt's gas and oxygen apparatus, in which the oxygen is drawn off for use, as required, into a detached bag.

Mr. J. A. BIGGS demonstrated a method of applying the coffer dam in cases of erosion of necks of teeth by means of impression composition, and an ingenious device for measuring roots for crowning.

The Hon. SECRETARY showed some modifications of the Lennox matrix, which he had found useful in practice, and a tapered screw, sent by Mr. Lennox, for use with roots, without previous tapping.

A number of interesting models and teeth were also shown, including a curious case of root absorption (H. Williams), misplaced canines (D. Corbett, Jun.), and an incarcerated upper canine (G. M. P. Murray).

The remaining business on the agenda paper was then adjourned to a future occasion, owing to the lateness of the hour, and the meeting broke up.

Western Counties Branch.

THE report of this Branch is held over to the June issue.

Midland Counties Branch.

THE Annual Meeting will be held at Hull.

PROVISIONAL PROGRAMME:—

Thursday, June 20, 8 p.m.—Social Chit Chat, at the Royal Station Hotel.

Friday, June 21.—At the Royal Infirmary:—

9.30 a.m. to 11.30 a.m. Clinics.

11.45 a.m. Annual Business Meeting of Members and Valedictory Address by the President, Mr. R. Rogers.

1 p.m. Adjournment for Luncheon at the Royal Hotel, on the invitation of the President-elect, Mr. J. C. Storey.

2.15 p.m. General Meeting.—President's Inaugural Address;

Papers, including a Symposium on Phases of the British Dental Association in their Relationship to the Public and the Dental Profession.

5 p.m. Afternoon Tea on the invitation of the Mayoress of Hull.

7 p.m. Annual Dinner at the Royal Station Hotel.

I. RENSHAW, *Hon. Sec.*

Rochdale.

Benevolent Fund.

NEW SUBSCRIPTIONS.

Edwards, R., 10, Oxford Street, Liverpool	£0 10 6
Hartley, W. C., Beale Lane, Shaw, Lancashire (per G. G. Campion)	0 10 6
Wood, R. E., 12, Princes Square, Harrogate	0 10 6

NEW DONATIONS.

Midland Branch of B.D.A., collected at meeting, Feb. 23, 1895, per G. G. Campion	3 15 0
Central Counties Branch of B.D.A., collected at meetings in 1894 and March, 1895, per A. E. Donagan	3 13 0
Irish Branch of B.D.A., collected at meeting, April 29, 1895, per G. M. P. Murray	1 16 6
Southern Counties Branch of B.D.A., collected at meeting, April 27, 1895, per F. V. Richardson	4 6 6

ORIGINAL COMMUNICATIONS.

Two Cases of Acute Alveolar Abscess in Connection with Teeth with Living Pulps.*

ONE SUPERVENING ON THE APPLICATION OF ARSENIOUS ACID TO AN EXPOSED PULP; THE OTHER AFTER MERELY BLOCKING THE CAVITY WITH A SANDARACH DRESSING.

BY A. E. BAKER, M.R.C.S., L.R.C.P., L.D.S.Eng.

CASE I.—Miss B., aged about 13 years, came on *April 28*, 1894, with a cavity on the lingual surface of the right upper lateral. The orifice was somewhat narrow, but the nerve was exposed at the bottom. Baldock paste was applied and the patient kept waiting half an hour with dressing *in situ*. The

* Read before the Metropolitan Branch, April 24, 1895.

dressing was then removed, the cavity enlarged—Baldock re-applied with a metal cap and secured with temporary gutta-percha. Patient was extremely nervous and fidgety.

On *May 3* she returned with a very large alveolar abscess pointing in the sulcus between the gum and upper lip. The lip was much infiltrated. There was no swelling in the palate. The abscess was opened with a lancet and about two drachms of pus discharged.

May 4.—The abscess had much subsided. The temporary gutta-percha and dressings were removed from the cavity, under the impression that the pulp had died in the meantime. On this assumption the cavity was left open for more thorough drainage.

May 9.—Abscess quite cured. Pulp was, however, found to be partially alive, and was therefore extirpated by driving up a wooden peg, shaped to the root. The root was then cleared and filled with gutta-percha—permanent—likewise the crown cavity. The patient up to the present date has been perfectly comfortable with this tooth.

CASE II.—Mr. H. F., age about 40.

May 22, 1894.—Left upper bicuspid was opened up from the distal surface, arsenic applied to the apices of the roots, where pulp remnants still retained their vitality. There having been slight uneasiness in the left upper first molar, it was examined and caries found progressing around a large amalgam filling in a mesial cavity. This was removed and the cavity prepared for refilling. A fair thickness of somewhat softened dentine was left covering the pulp—this was very sensitive—but there was no indication leading one to suspect that the tooth should be devitalized. As time was pressing, and to force away a mass of gum which protruded between the two teeth, both cavities and space between were packed with Sandarach dressings.

May 24.—Patient returned with a very large acute alveolar abscess above the roots of the molar. The Sandarach dressings were removed; the soft dentine covering the pulp chamber removed sufficiently to get a good exposure, but the pulp was acutely sensitive. It was made to bleed freely, and a small quantity of serum or plasma (?) exuded from the pulp chamber. The roots of the bicuspid were free from pain; they were therefore dressed with peroxide of hydrogen, but left open. Both cavities filled with loose cotton.

May 25.—The bicuspid roots were reamed and dressed with carbolic and iodoform on cotton, the crown cavity filled with temporary gutta-percha. Pulp of molar still alive but left untreated. Abscess had partially subsided.

May 28.—Abscess quite disappeared. Pulp treated with Baldock, capped and cavity filled temporary gutta-percha.

June 4.—Pulp removed from the pulp chamber and buccal roots, but found to be still alive in the palatine root, so Baldock re-applied and secured as before. This palatal nerve was not exterminated by the wooden peg method, as in the previous case. The patient was very nervous and I was apprehensive of causing a recurrence of the inflammatory process from the jarring of the root.

June 5.—Roots finally cleared, filled with Sandarach and iodoform on cotton. Pulp chamber filled with oxyphosphate and crown cavity with Sullivan's amalgam.

In discussing the question with some of my friends, several suggestions have been put forward to account for this unusual sequence of events.

(1) Was it due to a silk ligature up the root in the case of the lateral? No! I am not certain whether one was used for fixing on the rubber dam, but am certain none was left there. Supposing it had, and that it had been septic, a probably different train of symptoms would have followed, in which the looseness and elongation of the tooth would have been paramount. Moreover, the symptoms of inflammation would have continued as long as the foreign body remained.

(2) Was number one due to a septic instrument being passed up the root? I never use septic instruments, and no instrument of any kind whatever was passed even into the pulp before the abscess had in each case developed.

(3) Were the abscesses due to the escape of the arsenic from the cavities to the muco- or root-periosteum? No! In the case of the lateral, the cavity was soundly plugged and its orifice well away from the soft parts. In the case of the molar, no arsenic was applied before the abscess had developed. Further, I have never yet seen a case of acute abscess which might be attributed to the effects produced by the escape of arsenic, either from the outside or through the root apices, and I feel convinced that with the ordinary quantities of arsenic used it must very rarely occur. Slough-

ing of the gum and acute periodontitis are to be seen in varying degrees.

(4) There was in neither case any history of a blow, nor was there the slightest trace of periodontal inflammation in either tooth at the first visits of the patients.

(5) In neither case was there any indication of the pulp being partially in a state of putrefaction. At all events there was no foul odour, and in the case of the molar the pulp was completely covered with a fair thickness of dentine. This, too, had been sterilised by strong carbolic applications, and I had not at first any doubt of saving it alive. Besides, if the pulps were partially putrefied, *i.e.*, partially dead, how is it that in both, especially in the case of the molar, they retained their vitality, practically unimpaired, after all the violent inflammatory disturbances taking place around the root apices? Again, supposing septic material and gases had been escaping from the cavities previous to the commencement of treatment, and were forced in consequence through the apical foramina, as the only outlets left for them, how can we explain the absence of consequences of pressure on the integrity of the pulps themselves?

(6) I do not know whether any constitutional cause can be assigned to either case. The girl was of a rather strumous appearance of the "muddy" type, but very irritable, and no apparent history of strumous troubles. The gentleman, an apparently perfectly healthy, rather florid specimen.

(7) It was suggested at the meeting above mentioned, that the molar abscess might be due to a portion of dead pulp contained in one of the roots. But when this occurs, I believe that the root in question is considerably denuded, both of alveolus and muco-periosteum, and of a darker colour. Such was not the case with this tooth, and if the pulp in one root be dead and the remainder of the pulp alive, without the above conditions, how can it possibly be diagnosed?

(8) Microscopic collections of pus cells, called abscesses, are described as existing within living pulps, but obviously cannot be demonstrated with the tooth *in situ*.

(9) The only explanation that I can hazard is the following:—The pulps in each case were to some extent infiltrated by bacteria which had travelled through the dentinal tubes until they reached the vascular tissue. The pulps in their cham-

bers served as incubators for their further development, and slight hyperæmia (?), with exudation, being caused, the ptomaines were carried off by serum exuding from the vessels. This passed out freely in the lateral by the open cavity—in the molar through the soft cap of dentine. In each case gases might escape in the same way. In both the dressings would cause obstruction of the passage. The pressure effect would be to force the surplus fluids and gases through the apical foramina; here the tension would be greater, and possibly some causes occurred by which more virulent action was evidenced by the acute inflammation, leading to alveolar abscess. This is, I am afraid, a very crude explanation.

A Case of Aneurism and Abnormal Distribution of the Anterior Palatine Artery.

By J. H. EDWARD, L.D.S., R.C.S.I.

I WOULD beg to offer for the columns of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION the following interesting and singular case of aneurism. The subject of it was an elderly and distinguished patient. I had made for that gentleman a partial set of artificial teeth, to complete the superior maxillary row. They were fitted to the mouth compactly, and had been worn without any inconvenience for several weeks, to the entire satisfaction of the wearer, when the patient was much annoyed by a small vesicle, which had made its appearance upon the lingual centre of the roof of the mouth, immediately upon the edge where the gold plate formed the basis upon which the artificial teeth were fixed. The vesicle gradually increased until it had attained the size of a large pea. It presented a deep purplish hue, similar to that of a hæmorrhoidal tumour. At the first instance of its appearance, upon examination, I conceived it to be the ordinary "water-blister" caused from taking food too hastily into the mouth whilst in a hot state, or consequent upon a deranged state of the *prima viæ*, and an astringent "mouth wash" and aperient medicine were accordingly prescribed. When the material change as I have stated above had taken place, I was of opinion that

the pressure of the gold plate over the large surface of the soft texture of the gums and roof of the mouth had impeded the circulation of the blood, and had produced an enlarged varicose tumour. It exhibited no pulsation nor any other characteristics than those of an inert and now pendent encysted blood sac.

With a curved pair of scissors I snipped off the sac; a gush of blood instantly followed, filling the mouth and fauces, and almost causing suffocation, the patient not being prepared for this contingency. The blood being emptied from the mouth, I found that it continued to flow *per sultum* in a large full stream. I at once perceived that instead of a varicose tumour I had removed the aneurismal sac of a large artery. The diagnostic marks had been vague and undefined, and nothing characteristic warranted a different diagnosis of an affection never perchance met with before, the attendant upon an anatomical digression of rare occurrence. The patient, naturally enough, was very much alarmed. His mouth was being constantly filled with arterial frothy blood, which augmented the apparent impossibility of getting to the artery to secure it, pressure altogether failing to arrest the hæmorrhage.

I was fortunately enabled to overcome this seemingly formidable accident with little difficulty. In so doing I traced the anterior palatine artery passing through a hole in the centre of the suture of the palatine bones, whilst the *foramen incisivum*, or anterior palatine foramen, was absent. I called the attention of Dr. T., a very eminent surgeon, to the circumstance. He informed me that he had met with one or two similar aberrations. The knowledge of such anatomical deviations from the usual natural design was in such a case as this of high practical importance.

This anomalous affection and its result brought to my mind the suspicion—of which after examination proved the correctness—that the *foramen incisivum* was in this case situated in the centre of the palatine bones, and that either from the mechanical pressure of the gold plate or from some other cause, the aneurismal affection of the anterior palatine artery had been superinduced, and the pendent aneurismal sac formed. The indication of course was to arrest the hæmorrhage. I proceeded to cut a piece of cork into the form of the letter x, which I inserted in the end of the canula of a small trocar.

I passed the mouth of the canula well through the orifice into the palatine hole, and with a blunt piece of wire in the place of the trocar, pushed the cork into the desired position. It formed a most excellent button plug, and instantly stopped the bleeding. On the fourth day after its insertion the plug came away, and the patient experienced no further difficulty or inconvenience.

Periodontitis with Alveolar Abscesses following Influenza.*

By R. DENISON PEDLEY, F.R.C.S.Edin., L.D.S.Eng.

THE patient, a man of robust constitution, aged 37, sought advice with regard to his teeth, which had troubled him during an attack of influenza, and he could not eat with comfort.

On examination, the left upper central incisor and the left upper six-year molar were found loose and tender on pressure. They were free from caries and normal in colour. On lifting up the lip, pus was found oozing from the labial surface of the alveolus, above the apex of the central, and midway between the two external fangs of the molar. From the lingual surface of the central incisor a small hole was drilled into the pulp chamber. The pulp was alive, but certainly not so sensitive as one generally finds in an exposed nerve. An arsensical dressing was introduced, and after two days the contents of the pulp chamber were removed, and the root filled. A week later the sinus disappeared from the apex of the fang. As the molar tooth was by this time no longer tender to bite upon, it was decided to leave it alone.

In seeking a reason for such periodontal inflammation, which appeared to be quite outside or distinct from any pulpitis, I think one may find an analogy in cases sometimes met with among delicate children, and in what might be described as catarrhal inflammation of the mouth. A case of this kind will better illustrate my meaning. A girl of 11 years went to the out-patient department of the Evelina Hospital, for a swelling beneath the chin. On examination the lower central incisors (permanent teeth) were loose and tender on pressure, though normal in colour. Beneath the

* Read at a Meeting of the Metropolitan Branch, April 24, 1895.

chin, and immediately below the central incisor, was an inflammatory swelling; the skin was red, shining and tense, and distinct fluctuation could be felt.

The child was admitted to the wards. An incision was made, and a quantity of pus came away. On probing the wound a surface of rough bone was felt just above the symphysis. The cavity was packed with iodoform gauze, and the wound carefully dressed each day. Within eight days a small piece of bone exfoliated. It was removed, the wound healed up, and the teeth became quite tight in their sockets again, without any change of colour.

There was no history of injury, nor had the child suffered from any infectious fever of late.

The conclusion I have come to with regard to such cases is that where the nutrition of a patient is interfered with, either by chronic ill-health, or by a specific affection like influenza, inflammation of the mucous membrane of the mouth spreads by continuity of tissue to the periodontal membrane of the tooth from thence to the apex, and terminating in an alveolar abscess, with or without necrosis of the bone. This is certainly the first case I have seen with an alveolar abscess following influenza, and where such cases do appear I should feel justified (at any rate so far as the incisor teeth are concerned), in removing the pulp, and filling the root canal. If left alone it seems certain that the nerve will die, and putrefaction will follow.

A Case of Marked Discolouration in an Incisor containing a Living Pulp.*

By J. H. BADCOCK, M.R.C.S., L.R.C.P., L.D.S.

IN October last, when examining the mouth of one of my patients, a young man, my attention was arrested by the marked discolouration of a left upper central incisor otherwise sound. On inquiring whether he remembered receiving a blow on the tooth he informed me that in the previous December, when playing football, the tooth had been struck and partly displaced backwards. He replaced it in its original position, and beyond the discolouration which

* Read at a Meeting of the Metropolitan Branch, April 24, 1895.

quickly supervened he had experienced no further trouble. The staining was most noticeable towards the cutting edge.

I had no difficulty in diagnosing a dead pulp, and proceeded to open the pulp cavity with the intention of cleaning it and thus preventing further staining and averting a possible abscess. To my astonishment I found the pulp alive, but as I had gone so far, applied Baldock's paste and destroyed it. I had much difficulty in clearing the root, as there was a great deal of secondary dentine in that part of the pulp chamber which occupied the crown of the tooth, while the root canal was free. I imagine that the pulp was severely injured, if not severed by the blow, and that this injury was greatest at the point where the pulp enlarged in the crown and where most resistance would be offered to a pull. This caused immediate extravasation of blood and subsequent formation of secondary dentine by the irritated pulp. Gravitation accounts for the staining being greatest near the tip.

The case is an interesting one as showing that serious discolouration is not an infallible sign of a dead pulp.

LEGAL INTELLIGENCE.

Dental Legislation of British Columbia.

An Act to amend and consolidate the "Act to Regulate the Practice of Dentistry in the Province of British Columbia." (Passed Third Reading, 11th February, 1895.)

WHEREAS the profession of dentistry is extensively practised in Europe, the United States and the Dominion of Canada; and whereas the said profession of dentistry is protected by law in Europe, the greater portion of the United States, and in parts of Canada; and whereas it is expedient for the further protection of the public that there should by enactment be established a certain standard of qualification required of each practitioner of the said profession or calling, and that certain privileges and protection should be afforded to such practitioners:

Therefore, Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of British Columbia, enacts as follows :

1. This Act may be cited as the "Dentistry Consolidation Act, 1895."

2. It shall be unlawful for any person to practise, or attempt to practise, the profession of dentistry or dental surgery in the Province of British Columbia who is not a member of any College of Dentistry of any of the Provinces of the Dominion of Canada having authority to grant certificates of licence to practise dentistry ; or who is not a member of any College or School of Dentistry having like powers ; and who does not produce sufficient evidence of such membership, and testimonials of good character ; and who does not pass a satisfactory examination before the Board of Examiners duly authorised by this Act, and pay the required fees : Provided that nothing in this Act shall be so construed as to prevent physicians and surgeons and others from extracting teeth, but no person extracting teeth under the powers conferred by this section, excepting properly qualified dentists, physicians or surgeons, shall collect payment for such extracting of teeth.

3. A Board of Examiners, consisting of five practising dentists, residents of this Province, is hereby created, who shall issue certificates to persons in the practice of dentistry or dental surgery in this province, and whose duty it shall be to carry out the purposes and enforce the provisions of this Act.

4. The members of the said Board of Examiners shall be appointed by the Lieut.-Governor in Council, who shall select them from ten candidates, members of the British Columbia Dental Association, the said ten candidates' names to be submitted by the said British Columbia Dental Association. The term for which the members of said Board shall hold their offices shall be five years, except that the members of the Board first to be appointed under this Act shall hold their offices for the terms of one, two, three, four and five years respectively, and until their successors have been duly appointed. In case of any vacancy occurring in such Board, such vacancy shall be filled by the Lieut.-Governor in Council from twice the number of names of members of the British Columbia Dental Association submitted to him.

5. The said Board of Examiners shall keep a record in which shall be registered the names and residences or places of business of all persons authorised under this Act to practise dentistry in this Province. The said Board shall elect from its members a President, Secretary and Treasurer, and shall meet at least once a year, or quarterly if required. A majority of the members of the said Board shall constitute a quorum.

6. Every person desirous of being examined by the said Board touching his qualifications for the practice of the said profession of dentistry, shall, at least one month before the sitting of the said Board, pay into the hands of the Secretary the required fees, together with satisfactory evidence of the qualification and requirements of Section 2 of this Act.

7. To provide for the proper enforcement of this Act the said Board of Examiners shall be entitled to the following fees, to wit: For each certificate issued to persons engaged in the practice of dentistry in this Province at the time of the passage of this Act, the sum of ten dollars; for each certificate issued to persons not engaged in the practice of dentistry at the time of the passage of this Act the sum of thirty dollars.

8. There shall be allowed and paid to each of the members of the said Board of Examiners such fees for attendance not exceeding ten dollars per day, and such reasonable travelling expenses as the said Board shall allow from time to time; said expenses shall be paid out of the fees and penalties received by the said Board under the provisions of this Act.

9. All moneys shall be held by the Treasurer of said Board as a special fund for meeting expenses of said Board, he giving such bonds as security as the Board may from time to time direct.

10. The said Board at its first meeting, and from time to time thereafter, shall make such rules, regulations and bye-laws not inconsistent with the provisions of this Act as may be necessary for the proper and better guidance of the said Board, which rules, regulations and bye-laws shall first be published for one month in the *British Columbia Gazette*, and in one or more newspapers circulating in the Province. Any or all of which rules, regulations or bye-laws shall be liable to be cancelled and annulled by an order of the Lieut.-Governor in Council.

11. The Secretary of the said Board shall, on or before the fifteenth day of January in each and every year, enclose to the Provincial Secretary an annual report of its proceedings, together with an account of all moneys received and disbursed by said Board of Examiners; also a list of the names of all persons to whom certificates have been granted, and the qualifications therefore, and such list shall be published in the *Gazette*.

12. In case a charge is made against any licentiate of unprofessional conduct, or other misconduct provided for by the bye-laws to be passed under the provisions of this Act, the Board of Examiners shall have power to hear and determine the same, and for this purpose to summon witnesses before them and administer an oath or affirmation to such witnesses, and if any licentiate shall be found guilty of the charge preferred against him he shall forfeit his certificate and title, and the same shall be cancelled, subject to appeal to a Judge of the Supreme Court if brought within ten days; such forfeiture, however, may be annulled and the said license and all rights and privileges thereunder fully renewed and restored by said Board in such manner and upon such conditions and terms as the said Board shall think fit; Provided, however, that nothing in this Act contained shall empower the said Board to deal with any criminal or other offence provided for by law.

13. If any person after the period of three months after the passage of this Act, not holding a valid certificate, practises the said profession or calling of dentistry, or dental surgery, or wilfully and falsely pretends to hold a certificate under this Act; or takes or uses any name addition or description implying that he is duly authorised to practise the profession or calling of dentistry, or dental surgery, he shall, upon a summary conviction thereof before any Justice of the Peace, for any and every such offence, pay a penalty not exceeding one hundred dollars or less than twenty-five dollars, to be recovered on summary conviction, and the half of any such penalty shall be paid to the Board of Examiners; and it is further provided that no person who is not qualified under the provisions of this Act shall recover in any court of law for any work done or materials used by him in the ordinary work of a dentist.

14. The said Board shall also have power and authority to fix and determine from time to time a curriculum of studies to be pursued by students, and to fix and determine the period for which every student shall be articulated and employed under some duly licensed practitioner, said term not to exceed three years, and the examination necessary to be passed before the Board, and the fees to be paid into the hands of the Secretary of said Board, before receiving a certificate of license to practise the profession of dentistry.

15. All notices required by this Act to be published in the *Gazette*, and all expenses to be incurred under this Act shall be at the cost of the Board, to be paid out of the funds mentioned in Section 9; in case of deficiency, to be levied by assessment against the members of the profession.

16. The "Act to regulate the Practice of Dentistry," Chap. 34, Consolidated Statutes, 1888, is hereby repealed.

An Action for Assault.

HENRY HANDFORTH, of Harrogate, was charged by Henry Pearson, barman, of Knaresboro', with committing an assault upon him on the 28th ult.

Mr. F. Barber, solicitor, of Harrogate, appeared for the defendant, and pleaded not guilty.

Mr. BARBER, in opening the case, said the defendant was asked by the complainant to extract a tooth, and the wound which the complainant was there that day to charge the defendant with was sustained by an accident, partly his (complainant's) own fault. He had been willing to accept a settlement of the matter, and the defendant thought to avoid the publicity, and had made the complainant an offer of £5, payable in weekly instalments of 5s. But the complainant wanted the money paid down in bulk.

COMPLAINANT stated on the 28th ult. he went to 10, Chapel Court, Harrogate, to the house of a man named Peacock, to get a tooth drawn, as he had not many hours of liberty except on a Sunday. He went to the house between 3 and 3.15 p.m., and the defendant and complainant went into Peacock's room, and defendant attempted to draw his tooth. He made a "haggle" about it, and complainant asked him to be a little easier, when he deliberately gave him a thrust, and they had a struggle on the stairs. They were afterwards pushed into another room. Defendant had some instrument in his hand, and he slashed him across the left cheek with it, and he also

bit him on the wrist. They washed and dressed the wound in the house, and he afterwards went to the police-station, and subsequently to Dr. Dimmock, who stitched the wound up.

Cross-examined by Mr. BARBER: It was at his request that he wanted to have the tooth extracted. He did not seize defendant's hand violently while he had the forceps in his mouth. It was with great difficulty that the defendant got the instrument out of his mouth. He did not strike the defendant, but the defendant drew him on the top of him, and drew the forceps across his cheek. Since it had happened he had seen the defendant, and he (the plaintiff) ultimately agreed to take £5 to settle it, at 5s. a week. He afterwards told him that he could not take the money that way, as he would have the doctor's bill to pay, and he wanted the money cash down, or the case would have to go forward.

EDWARD BARROUGH, labourer, of Harrogate, also gave evidence as to the occurrence, and said that the complainant was drunk at the time that the tooth was being extracted. He and Peacock put some plaster on the complainant's face and washed it. When complainant went out, he kicked up a row in the street, and wanted to fight the defendant.

The MAYOR said that the case would be dismissed.

Mr. BARBER asked for a certificate of dismissal, and the Bench granted the application.—*Yorkshire Herald*.

[The name of Henry Handforth does not appear on the Dentists' Register for 1895.—ED. *J.B.D.A.*]

Action against a Dentist.

ON April 20, at the monthly sitting of the Northallerton County Court, before his Honour, Judge E. R. Turner, the principal case heard was one in which Isaac Newton, platelayer, Northallerton, sued John Angus, dentist, Darlington, to recover £6, being £4 for money paid for a set of false teeth, and £2 for damages.

Mr. E. GARDNER, solicitor, appeared for the plaintiff and said that in September, 1893, defendant called upon the plaintiff and obtained an order for a set of new false teeth for £4, and was paid £1 on deposit. The defendant told Mrs. Newton that the operation of measuring her for them would take some twenty minutes, but that after she got them in she would be able to eat her Christmas dinner. On September 27 Dr. Bartram attended to administer chloroform, when Angus extracted a number of her teeth. Dr. Bartram then remonstrated with defendant and told him that there were some more to draw. Afterwards Angus said he would have another go, and again Mrs. Newton was chloroformed, and defendant extracted some more of her teeth.

Afterwards he said that three more of her teeth would have to be drawn, but she refused to allow him to pull any more. She became so ill, however, that Dr. Bartram was sent for, and he extracted the other three teeth. The false teeth were supplied, and Angus guaranteed them to be a perfect fit, and said he would alter them free of charge for three years. On December 10 defendant was paid another £1, and then on December 22 defendant sent in a bill for £5, less £2 cash received. Defendant also wrote stating if Mrs. Newton sent £2 10s. by return of post he would settle the bill. On December 22 defendant called to see Mrs. Newton, and expressed his regret at having caused her annoyance by the above letter. The false teeth were supplied, and the other £2 paid, but Mrs. Newton could never wear the teeth. A letter was written him, and he called and promised to make her a new set, but before Mrs. Newton could get them into her mouth one of the teeth dropped out on to the floor. Angus at last took the teeth away with him to repair, but refused to refund the £4.

Dr. BARTRAM said that he considered defendant in drawing Mrs. Newton's teeth was rather rough, and the operation was unskilfully performed. There was a great deal of hæmorrhage, and he pointed out to Angus that there were three other teeth which ought to have been drawn. The same night at 11.8 p.m. he was called and drew the three teeth. Mrs. Newton's mouth was very much lacerated. His charge was 30s.

The defence was that it was impossible to extract teeth without pain, laceration, and soreness of the gums. Defendant was prepared to carry out the guarantee he had given, and make the teeth fit.

His Honour ordered defendant to refund plaintiff the £4 and pay costs.—*The Yorkshire Herald*.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Odontological Society of Great Britain.

THE usual monthly meeting was held on the 6th inst., Mr. FREDERICK CANTON (President) in the chair.

The minutes of the previous meeting were read and confirmed. The following gentlemen were balloted for and duly elected members:—Messrs. Leslie Maury Stocken, L.R.C.P., M.R.C.S., L.D.S., Manchester House, Ealing (non-resident); Francis R. Flintan, L.D.S.Eng., Tower Lodge, Weybridge, Surrey (non-resident).

Messrs. Curnock and Sidney Spokes were appointed to audit the Society's accounts for the year.

The PRESIDENT said that since they last met the Society had sustained loss, through the death of one of its late Presidents, Mr. Jas. Parkinson, and also of one of its members, Mr. Mark J. Bloom, of Dublin. Letters of condolence had been sent by the Council to the families of both those gentlemen.

The LIBRARIAN reported the receipt of the usual periodicals and magazines, and stated that a new list of members would be issued after the annual meeting next month. He would be glad to receive changes of addresses of any members, and also any additional qualifications, so that the list might be as correct as possible.

The CURATOR (Mr. Storer Bennett) said models had been presented to the museum by Mr. Turton, a student of the Dental Hospital of London, showing an extreme example of what was known as the saddle-shaped arch. Mr. Dalton, also a student at the hospital, had sent models of a brother and sister, aged 2 and 4, showing in each case crowding of the temporary central incisors. Such cases were rare, and it was difficult to understand how crowding of the central incisors could take place before even the second temporary molars had been erupted. The models being those of brother and sister formed an extremely interesting series.

Mr. BENNETT also presented to the museum a cast of a skull exhibited to the Society some few months since by Mr. Macleod, showing a remarkable collection of abnormalities. It was an adult skull, but the right upper canine was unerupted and also the first permanent molar. On the left side the bicuspid and canines were transposed, both bicuspid being so twisted that the buccal sides were turned inwards. Enamel nodules were found in two of the unerupted teeth. The skull itself being a private specimen could not be presented to the museum, but a very successful cast had been taken by the gelatine process.

Mr. GARTLEY presented models showing transposition of the first upper bicuspid and canine; and Mr. BRUNTON, models showing transposition of laterals and canines in a patient 54 years of age.

Mr. SCHELLING presented specimens of old mechanical work.

Mr. F. J. BENNETT read a paper on "The Nature of the Transparent Zone of Dental Caries," illustrated by micro-photographs thrown upon the screen:—

MR. PRESIDENT AND GENTLEMEN,—Amongst the phenomena of dental caries there are none of greater interest, none upon which opinions still differ more, than those relating to the zone of transparency. A true knowledge of the nature of this appearance is desirable, not only in relation to dental caries, but also as throwing light on the properties of dentine itself. For should the zone of transparency prove to be a manifestation of a physiological activity of the living parts of dentine, that structure would be brought into much closer affinity with the other tissues of the body than would be possible to ascribe to

it otherwise. The evidence which I place before you this evening may be considered as the outcome of an enquiry on my part as to how far the zone of transparency favours the view of vital activity in response to the stimulus of caries or the reverse. The opinions upon the subject generally resolve themselves into the question: Is the transparency due to increased calcification of the part or not? There can be no doubt that this point clearly proved would go far to settle the matter.

The most damaging argument against those who hold the view of increased calcification of the fibril, is that which asserts that a transparent zone is to be found in natural teeth mounted on plates, and which have subsequently been attacked by caries. However, the presence of the transparent zone in relation to caries, in such teeth, appears to be doubted by Dr. Miller. But although he speaks of having "split about sixty, which appeared especially suited for the purpose, one case only revealed a phenomenon resembling transparency, but even in this case it was not possible to say the change was not brought about whilst the tooth was still living." It must be remarked, however, that Dr. Miller does not mention having examined the specimens under the microscope. Dr. Miller, returning to the general question of the zone transparency, says: "A decalcification, however, has most certainly not taken place in the transparency in question."*

The matter being left an open question, I determined to examine specimens stained with gold chloride, and further select amongst others, teeth in which there was a partial or complete arrest of the caries, as in these the fibril might be supposed to be calcified from the fact of the arrest.

With two obvious exceptions the teeth were all fresh, with living pulps. No acid whatever was used in any part of the process. They were ground, polished, soaked in the gold chloride solution and finally mounted in glycerine jelly. The dentinal fibril and the carious portions are the deeply stained portions.

A number of specimens were then shown on the screen and described. The slides brought out various points which were summarised by the author as follows:—"that inasmuch as enlarged and thickened tubes can be demonstrated in parts—I do not say in every part and in all cases—we cannot regard the zone of transparency as an area of increased calcification, and that the phenomena point to the zone as representing a precursory stage of dental caries."

In the discussion which followed Mr. MUMMERY said the paper was a very interesting contribution to the pathology of caries. He thought it possible that the occurrence of the enlarged tubes, shown in the photographs, might be accounted for by the suggestion that

* "Micro-Organisms of the Human Mouth," p. 161, 1890 edition.

there had at some period been an encroachment upon the ordinary translucent zone by the zone of decalcification, accounting for the appearances in the dentine. There had been caries and arrested caries, and the decalcified zone had really worked, as it were, into the zone of translucency.

Mr. J. F. COLYER asked whether in the incisor tooth of which sections had been shown the author was quite certain that caries had not started previously to its being fixed on the plate. He also inquired how the author accounted for the translucent appearance shown in the dentine long before the whole of the enamel was quite disintegrated, and said that a translucent zone was often seen in teeth which were not the subject of caries at all but where there was abrasion or erosion.

Mr. STORER BENNETT said the author's investigations were made to determine a certain thing, viz., whether there was increased calcification, or, on the other hand, suffering in this zone of transparency. The evidence went to show distinctly that there was no vital action in the teeth and no attempt at calcification to arrest the approach of caries, but on the other hand there was, in what had been described as the transparent zone, enlargement and not contraction of the tubes, as there must have been if excessive calcification had taken place in them. The fact that this zone was found very well marked in teeth that had been worn on artificial plates was, he thought, a most convincing argument against any vital theory being possible in the caries, and certainly that view was emphasised by the specimens showing enlargement of the tubes in the zone of translucency in those dead teeth which had been worn on plates.

Mr. CUNNINGHAM said what had been described as thickening of the tubes shown in some of the micro-photographs appeared to be owing to the diagonal cut of some of them. He had seen similar appearances in teeth that were not pathological at all.

Mr. SEWILL said, having had an opportunity of examining a large number of specimens, he agreed fully with Mr. Bennett in the conclusions he had drawn as to the absence of any vital action taking place in teeth which were composed of 75 per cent. or more of mineral matter, and were devoid of blood vessels. He challenged those who took an opposite view to point out any place in the body where vital action took place in the absence of blood vessels, and contended that in the case of teeth there could be none. He thought the specimens shown would have been very interesting if they had been stained for micro-organisms, because then they could have seen more exactly where the micro-organisms had penetrated.

Mr. F. J. BENNETT in reply to Mr. Mummery, asked, referring to one of the micro-photographs, if the enlarged tubes were due to primary caries, why should not caries affect the secondary dentine? That appeared to be a strong argument, seeing that the secondary dentine was shown to be normal. They knew also that the first effect of

caries was stain, and if caries had penetrated the translucent zone, it would have been stained, and no longer translucent. With regard to Mr. Colyer's inquiry, he had examined the dead teeth from which the sections were taken, and failed to see any trace of decay having occurred previously to the mounting of those teeth. In fact, with the number of teeth available in those days, it was extremely unlikely that they would have used a carious tooth in that way. As to there being a zone in cases of attrition or erosion, his paper was really a branch of a larger inquiry into the changed conditions in attrition. He had come to the conclusion that in some cases there were indications of softening. He had made many sections of erosion in different positions, but had never seen the faintest tendency to increased calcification in a zone of translucency.

The thanks of the Society having been accorded to Mr. Bennett for his valuable paper, some time was spent by the members in the examination of a series of microscopic preparations prepared by the author in illustration of his paper.

The meeting then adjourned.

Newcastle Dental Hospital.

A DENTAL Hospital for Newcastle was opened by the Mayor on April 21. As evidence of the need for the establishment of a dental hospital, it may be mentioned that during the year 1894 more than 3,400 cases were treated by the honorary dental surgeons in connection with the medical charities of the city. To provide such an institution being beyond the scope of the existing medical charities, a meeting of all the licentiates in dental surgery practising in Newcastle-on-Tyne was called at the instance of Mr. R. L. Markham, the honorary dental surgeon to the Royal Infirmary and to the Newcastle upon-Tyne Dispensary, and the gentlemen present formed themselves into a committee with a view to the formation of the hospital, and personally guaranteed to secure its continuance for at least three years. Sufficient funds having already been obtained to meet the current expenses of the hospital for the present year, it is proposed to credit all subscriptions hereafter received to the year 1896. There is, nevertheless, still much required before the equipment of the hospital can be considered thoroughly efficient, and donations are solicited for that purpose. The hospital is open daily from 8.30 a.m. to 9.30 a.m., Sundays excepted. The honorary staff and committee are as follows:—Hon. consulting

physician, George Hare Philipson, M.A., M.D., D.C.L., F.R.C.P.; hon. consulting surgeon, James Rutherford Morison, M.B., F.R.C.S. Eng.; hon. consulting dental surgeon, E. Fothergill, L.D.S.Eng.; hon. dental surgeons, J. W. Daniels, L.D.S. Edin., J. T. Jameson, L.D.S. Edin., J. C. S. Harper, L.D.S.I., R. L. Markham, L.D.S.I. W. D. Moon, L.D.S.Eng., and W. G. Routledge, L.D.S. Edin.; hon. anæsthetists, George Metcalfe, M.B., B.S., Edward F. Pratt, L.R.C.P. Lond., and Septimus Basham, L.R.C.P. and S., Edin.; provisional committee, Ald. W. H. Stephenson, J.P. (Mayor of Newcastle-upon-Tyne), Ald. W. D. Stephens, Ald. W. Sutton, Mr. G. B. Bainbridge, Councillor J. A. Baty, Mr. James Logan, jun., and Mr. G. R. Brewis, and the hon. dental surgeons; hon. treasurer, Mr. J. C. S. Harper, Gresham House, Newcastle; hon. secretary, Frank Marshall, 27, Mosley Street, Newcastle.

At the opening ceremony the Mayor was attended by Mr. Frank Marshall, hon. secretary, and there were present:—The Rev. Principal Gurney (Durham College of Science), Ald. Sutton, Mr. James Logan, jun., Dr. Ellis, Mr. C. L. Routledge, Mr. Brummell, Miss R. C. Routledge, Dr. Metcalfe, Professor Oliver, and members of the staff and committee of the hospital, and others. Letters of apology for absence were read from Professor Philipson, Mr. E. Fothergill, Mr. G. R. Brewis, and Mr. W. G. Routledge.

MR. FRANK MARSHALL said he had been requested to ask Ald. Stephenson, as chief magistrate, to declare the Dental Hospital formally open that day, and to accept it as an addition to the public charitable institutions of the city.

The MAYOR expressed his pleasure at being present to show his sympathy with and appreciation of the effort which had been put forth by Mr. Markham and his coadjutors, the praiseworthy effort, he took it to be, to meet what was undoubtedly an acknowledged want in the city, for of all the institutions that had their assistance in Newcastle, he ventured to say that that which they were then inaugurating was not the least important. That institution commended itself to the hearty approval of right-thinking people for many considerations, and one of the first was that it was intended to give gratuitous service to the necessitous poor. He thought the regulations of the new hospital were framed with an idea to the good order and systematic good government of the institution. The hospital was well-staffed and well-manned. He mentioned that, in the sixteen days the hospital had been opened, no less than ninety-three cases had been dealt with satisfactorily.

The Rev. Principal GURNEY moved a vote of thanks to the Mayor, and expressed a hope that the hospital would be useful also as helpful to form a school for dental surgeons in connection with the Durham College of Science and Medicine.

Mr. MARKHAM seconded the motion, which was carried by acclamation, and

The MAYOR having responded, the proceedings were brought to a close.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Gouty Pericementitis.

By EDWIN T. DARBY, M.D., D.D.S.

IT is not my purpose at present to enter largely into the physiology, pathology, or even etiology of the diseases under consideration. Another has done this much better, I am sure, than I could do it, and I shall take the liberty of quoting somewhat largely from the admirable paper by Professor C. N. Peirce, and appearing in the *International Dental Journal*, April, 1892, and January, 1894. He says: "The pathological state affords the only true basis for a scientific classification of disease. The term pyorrhœa alveolaris refers only to one symptom, and is therefore provisional, and more or less objectionable. As you are aware, Dr. G. V. Black has with some degrees of appropriateness applied to the disease under consideration the terms gingivitis or phagedenic pericementitis and calcic pericementitis. While these two terms approximate the truth, they do not to my mind, express the whole truth." "From a careful study of the abnormal alveolo-cemental membrane, it appears to me that we must recognise two closely allied but yet different pathological states; different, as I shall attempt to demonstrate, in their *etiology*, in their *clinical history*, in their *symptomatology*, and in their *susceptibility to treatment*."

"In the first place, I believe that while pericementitis is associated with calcic deposit, the origin of the calcic salt and the antecedent condition which determines the locality and character of the deposit, as well as the train of totally distinct symptoms which follow, lead inevitably to the conclusion that the different diseases have thus far been confounded. In one form of pericementitis the origin of the calcic salt is the saliva, and in the other from the blood. The former I shall designate as pytalogenic calcic pericementitis, expressive of the idea that in its origin it is local, peripheral and salivary. The latter I shall designate as hæmatogenic calcic pericementitis; that it is altogether a distinct affection from the first mentioned, and dependent for its cause upon some morbid material derived from the blood, will, I think, become apparent from the facts which I hope to deduce."

The author from whom I am quoting is to be congratulated upon the nice distinction which he has made and the terms which he has applied to the source from which these deposits arise. Again he says (referring to the hæmatogenic variety of calcic pericementitis) "that in this form of the disease the morbid process begins on the root, and very frequently, if not usually, in the vicinity of the apical extremity, this being in marked contrast to the pytalogenic form,

which always has its origin at the gingival borders." I think it may be said to be generally admitted that two distinct forms of calcic deposits are to be found upon the teeth, the one salivary, the other serumal, or, as Dr. Peirce terms it, hæmatogenic. Again it is believed by many that the last-mentioned variety is often deposited at or near the apices of the roots of teeth before any lesion or pocket has been formed at the gingivæ. Again, it has been claimed by some that the hæmatogenic variety is an irritant, and is the cause of one form of pyorrhœa alveolaris, and not the sequence. In other words, that it antedates the inflammation instead of being the result of the inflammatory condition. The alveolo-cemental membrane is a connective tissue, fibrous in character, exceedingly vascular, and resembling the connective tissue found in articulations and joints in other parts of the body. Its function is not unlike that of other connective tissue, and experience has shown that it is susceptible to the same morbid influences.

The object of this paper is to describe a few peculiar cases which have come under my observation during the past fifteen or more years—cases which at the time puzzled me not a little, and even now would bear a little illumination. These cases may not be exceptional, and possibly all of you have seen similar ones. I shall describe them as concisely as possible, and trust that you may grasp the salient points of each.

Mrs. A., perhaps 40 years of age, called, suffering much discomfort from a first superior molar. The tooth was sound, with the exception of a minute filling in the masticating surface. All other teeth were present in the mouth, and no indication of disease elsewhere. The first thing to attract my attention was a tumefaction at or near the apex of the buccal roots. It was quite large, and presented much the appearance of an apical abscess just ready for the lancet, except that its colour was dark red, almost purple in hue. The tooth was somewhat elongated, and sore to percussion or pressure. Without a moment's hesitation I decided that the tooth was a devitalised one, and with a spear-pointed drill in the engine proceeded to make an opening into the pulp-chamber, the gold filling being my starting-point. As I approached the pulp, my patient gave indication of increasing pain, but supposing that to be caused by my pressure upon an inflamed pericementum, I lessened the pressure and revolved my drill with greater rapidity. You can imagine my surprise and chagrin when I found that I had plunged my instrument into a vital pulp. I said to myself, An anomalous case indeed, an abscess upon a vital tooth! I then began to look for a cause, but to my surprise there was no break at the gingivæ, no salivary or serumal deposits to be seen, and no pus in what I had taken to be a sac. Baffled and confounded, I applied the ordinary remedies for pericementitis, devitalised the pulp and extirpated it, filled the canals, pronounced myself a careless dentist, and awaited results. Subsequent attacks of a similar character extending over a period of perhaps five years, rendered the tooth a source of annoyance and discomfort. My patient finally concluded that an empty house was preferable to a bad tenant, and it was removed, the first break in an arch which contained sixteen beautiful teeth. Near the apex of the buccal roots of the tooth in question a deposit of considerable serumal calculus was found, and in my opinion this was the cause of the first attack of pericemen-

titis. I cannot say of my own knowledge that this lady ever had an attack of gout, but I do remember that prior to her death, her hands were much disfigured by nodosities upon the joints of her fingers. If this lady was a victim of uricacidæmia, it may have taken the form of rheumatic arthritis, instead of gout as generally understood. Garrod says: "It is by no means rare to hear of inflammation of a joint, by one practioner called gout, by another rheumatism, and by a third rheumatic gout."

The following case is more satisfactory, because the patient is living, and I have been able to follow it until the present time. Miss B., aged about 45, called, with a second inferior molar somewhat elongated, and exceedingly sore to the touch. I observed the same tumefied condition upon the gum near the apex of the root, the same angry red appearance of the mucous membrane. The tooth was a sound one, never having been carious. Remembering my former case, I did not attempt to open the tooth, but gave it such treatment as is general in pericementitis. I naturally looked for some exciting cause in the form of calculus, but failed to find any, either upon the tooth in question or other teeth in the mouth. I am positive that there was no pocket at the gingivæ. This attack lasted for several days and gradually subsided, but was followed a year or more later by another, at which time a pocket was apparent, and pus exuding from about the neck of the tooth. The tooth was finally lost, and serumal deposits found near the apex. Two other molars and a bicuspid in this mouth have had like histories during a period of ten years. Another molar is apparently to be lost in the same manner, for during the past few months I have seen the case to give it such treatment as I could to relieve existing pain. I may say just here that but one tooth in the mouth has been affected at the same time, and there is no appearance of pyorrhœa alveolaris in any part of the mouth.

I have recently learned the following facts, which it seems to me have an interesting bearing upon this case. The father, whom I knew well, had been a lifetime sufferer from gout, the classical kind, which began with painful manifestations in the great toe, and did not often get above the ankle-joints. I remember that years ago he told me he used Blair's gout pills, made in England, and that he obtained greater relief from these than from anything he had ever tried. He had been a patient of mine for twenty years, and has lost many of his teeth from pyorrhœa alveolaris. The daughter whose case I am describing has never been in robust health, and has frequently had painful attacks of gout of the stomach. It seems to me that to an unprejudiced mind the proof of an inherited gouty diathesis is almost positive, and if uric acid has any part in the production of calcic pericementitis, here is a case to warrant the supposition that it was the exciting cause in the attacks narrated.

The case which I am about to describe next would seem to furnish more positive evidences of the dual existence of uricacidæmia manifested in the form of gout and inflammation of the alveolo-cemental membrane than either of those previously mentioned. It is that of a bachelor of about 50 years of age, who called upon me about three years ago with much the same conditions which I have described in the preceding cases. At that time a bicuspid of the superior jaw was the seat of pain. The gum presented the same swollen and angry

red appearance. He complained of great sensitiveness to heat and cold, and to pressure. As the tooth was without fillings or cavities of decay, I did not open it, but gave it the ordinary local treatment common in cases of incipient pyorrhea alveolaris. It was some days before relief was obtained. At that time there were no other teeth similarly affected. As I remember the case, there was no discharge of pus following the attack. A year, or possibly eighteen months subsequently, the gentleman called, suffering pain in the same tooth; this was followed by suppuration, and of course, a pocket at the gingivæ. Since then two or more teeth have had like histories. Anxious to know whether this individual had the uric acid vice, I inquired of an intimate friend of his and learned the following particulars. "He has been a 'high liver' for many years, indulged freely in wine, and especially champagnes; is a great sufferer from gout and dyspepsia."

I have reserved until the last a case which impresses me as being of peculiar significance. A gentleman between 60 and 65 years of age has called upon me several times during the past six months, complaining of great discomfort in a superior molar. It has been somewhat elongated and painful in mastication. There have been no marked indications of gingival irritation, no deposits of calculus, but redness and tumefaction along the buccal aspect of the gum. It had failed to respond to ordinary treatment, and as other teeth had been lost from similar attacks, the gentleman insisted upon having this one removed. I found deposits of serumal calculus on both buccal roots. In reply to my inquiry as to the presence of gout or rheumatism in the system, he pointed me to his feet, which were encased in shoes made of soft kid, and greatly out of proportion to the man's stature. He then said: "I have been a great sufferer from gout for many years. I inherited it from my ancestors. I have thrice been to German spas for relief, and spent the whole of last summer at Carlsbad, hoping to find a cure, and am indeed better than in the spring." In reply to my inquiry as to whether he had taken salicylate of soda, he replied that he had taken pounds of it, until it so upset his digestion that he was obliged to discontinue its use. He had also taken lithia in various forms, but with indifferent results. Colchicum afforded the surest relief in exacerbations of the disease, but this was open to the same objection as to the salicylate of soda.

There has been one peculiar manifestation in the cases which have come under my observation which at first I found it difficult to explain, and that is the absence of suppuration in the first or even the second attacks of pericementitis. There have been heat, redness, swelling, pain, but not always pus. But as I have thought more upon the subject, I have concluded that the formation had not yet reached sufficient quantity to produce tissue-disorganisation, and that, like other forms of pericementitis, yielded to blood-letting and counter-irritation.—*Cosmos*.

Plexiform Sarcomata of the Palate and Velum Palati.

NÉLATON was the first to call attention to the above variety of tumour, of which numerous observations have been published of late. These tumours are invariably hard, encapsuled, of slow growth, and present no tendency to recurrence or metastatic formations. Prof. Robin, who examined a certain number of these neoplasms, came to the conclusion that they were genuine adenomata, starting in the mucous glands of the palate. Since then the tendency has been to describe as adenomata all tumours of the kind; but this view is far from justifiable. There can be no doubt that true adenomata of the mucous glands of the palate exist; but these neoplasms run a course and present clinical characters of an entirely different order from those of tumours which have hitherto been regarded as simple adenomata. The former are pediculate, invariably of small size, and are prone to cystic transformation, whereas the latter are in reality identical, both anatomically and clinically, with the tumours of the parotid region, which are known as mixed tumours or sarcomata (Kaufmann). These tumours of the parotid have been considered to be due to a congenital germ, existing in the gland, and it is probable that neoplasms of the same origin sometimes develop in the palatine region. In this region, indeed, the phenomena of embryonic development are extremely complicated, and frequently give rise to fissures and various malformations. It is, therefore, probable that foetal germs are sometimes included in the tissues, and ultimately give rise to the formation of neoplasms. Dr. V. Eisenmenger (*Deutsche Zeitsch. f. Chir.*, xxxix., 1-2) has lately published an important contribution to the study of these tumours, in which he relates five cases from the surgical wards of Profs. Albert and Weinlechner at Vienna. In addition he has brought together seventy-six cases previously published. Minute investigations of the anatomical structure of these tumours showed that they are characterised by endo- or perithelial proliferation of cells, which may subsequently undergo partial colloid degeneration; in addition, they frequently contain in variable proportions elements of enchondroma, myxoma, fibroma, and lipoma (mixed tumours). They are, consequently, by no means of epithelial origin, as has hitherto been supposed.

Mixed tumours of the parotid region are of more frequent occurrence on the left than on the right side, and this peculiarity exists also in respect of the analogous tumours of the palatine region. The same remark holds good of congenital fissures of the palate and upper lip, which also show a decided predilection for the left side. These tumours never occupy the midline, nor do they ever go beyond the latter, unless they are of a malignant nature. Similarly, they are hardly ever found behind the fascial barrier of the velum palati, being, as a rule, situated in front of this fascia and projecting into the mouth. Sometimes the tumour is situated farther toward the back, protruding both into the buccal cavity and the parotid region, so that it becomes a difficult matter to decide whence it starts. It grows very slowly, from eight to ten years being required for the tumour to produce functional disturbances of sufficient importance to induce the patient to consult a medical man. The onset of the affection appears to occur most frequently between 10 and 30 years of age.

The capsule, with which mixed tumours of the palatine region are provided, prevents them from invading the neighbouring tissues. They never produce glandular or other metastatic growths, and recurrences do not take place after extirpation. This benignity, however, is not an invariable rule, for it may, indeed, happen that the tumour, in consequence of a traumatism, or even spontaneously, suddenly begins to grow rapidly, perforating the capsule and invading the neighbouring tissues. Even in such cases, however, complete extirpation is never followed by recurrence. With the exception of these varieties, in which malignancy is more apparent than real, the tumours in question usually remain a long time without causing marked functional disturbances. Phonation is the first to change; respiratory disturbances set in only when the tumour has attained the size of a walnut; sometimes attacks of suffocation occur, more particularly at night, from the effect of which death may ensue suddenly. Lastly, deglutition may be interfered with to such an extent as to form a serious obstacle to proper nutrition. Nevertheless, the occurrence of grave symptoms of functional disturbance is an exception, the prognosis being, as a rule, favourable.

Extirpation of these tumours is usually attended with no difficulty whatever, except in cases presenting signs of malignancy. When the tumour is encapsuled it can be easily shelled out, without much loss of blood; suturing the flaps of the mucous membrane is unnecessary. On the other hand, when the tumour presents a malignant character, it is sometimes necessary to resect a portion of the velum palati or bony palate, an operation which requires preliminary tracheotomy with plugging of the larynx.—*The Medical Week.*

Chronic Stomatitis followed by Death.

DR. K. WINKELMANN relates the case of a man, aged 46, who, without apparent cause, was attacked with an exceedingly painful vesicular eruption of the right half of the tongue. The vesicles left behind them ulcerations which, in spite of all efforts to cause cicatrisation, by means of antiseptic solutions, cauterisation with nitrate of silver, and the internal administration of potassium iodide, on the hypothesis of a syphilitic origin, increased to such an extent as to involve the mucous membrane of the gums, mouth, and lips. These ulcerations were superficial, not indurated at the base, and bled at the slightest touch; they varied in size from that of a lentil to that of a pea. Ptyalism was present, but the submaxillary ganglia were not swollen. The urine contained neither sugar nor blood.

The condition of the patient grew slowly worse, and there appeared upon the skin of the feet and legs numerous petechiæ, not larger than the head of a pin. The ulcerous process now invaded the pharynx and even the larynx, diarrhœa supervened, with symptoms of febrile bronchitis, and the patient died from exhaustion six months after the onset of the affection. A *post-mortem* was not permitted. Bacteriological examination of the mucous membrane during life showed the presence in the ulcerations of a microbe analogous to that of alcoholic fermentation, capable of culture in almost all media, and

similar to that isolated by Siegel in the course of an epidemic of apthous disease of cows which had raged among men and animals. Winkelmann believes that his case was of the same nature, although the patient could not remember having been brought in contact with cows suffering from the affection, and although inoculations of the microbe into animals gave only negative results.—*Universal Medical Journal, from Deutsche Zeitsch. f. Chir.*

A Case of Osteo-Sarcoma of the Lower Jaw.

Guy's Hospital Gazette for April 6 contains the following notes of an interesting case of osteo-sarcoma of the lower jaw.

N. P., aged 11. Was admitted, under Mr. Dunn's care, on March 5, for a hard swelling in the left half of the lower jaw. The patient is a bright, well-grown, healthy-looking girl, and before the present trouble, has had no illness. She is one of a family of eight, all living and well.

History of the present trouble.—Two years ago she had an abscess, connected with the left side of the maxilla, which "burst," a quantity of matter coming away; the swelling, which only partially subsided, since that time has continued to increase, the rate of growth being more marked in the past few months. There has been no complaint of pain. No teeth have been extracted.

On admission.—There is a marked swelling about the angle of the jaw, extending from the level of the lobe of the left ear to the angle of the mouth. The skin is normal in appearance. Inspection of the mouth shows the lingual side of the gum to be considerably expanded, and a more marked expansion on the outer side of the jaw. The top of this tumour is flattened and little raised above the level of the alveolar margin. The second molar tooth has not been erupted. The first molar and the bicuspid are crowded together anteriorly, and the canines displaced. The gum expanded over the tumour is normal and of a smooth, rounded outline, its greatest transverse diameter measuring two inches.

To the touch, the skin is unattached to the tumour, which is hard and roughly lobulated: it is not tender; no egg-shell crackling can be detected. With the exception of a small spot anteriorly, which is elastic, there is no soft point on it. It is plain that some growth or cyst is expanding the bone, and it can be felt extending up the ramus of the jaw, and from the alveolar to the inferior margin. The whole mass in shape and size may be compared roughly to a Tangerine orange. There are enlarged hard glands below the jaw on both sides.

The diagnosis presented some difficulty, and the following suggestions were made:—(a) A central osteo-sarcoma, expanding the bone, on account of its hardness, and because it affected the ramus. It was, however, objected that two years was a long course for such a tumour. (b) A dentigerous cyst, because the second molar had not made its appearance, and on account of the long painless history. (c) A chronic osteitis, and this was supported by referring to the original causation, which was inflammatory. (d) An ivory osteoma expanding the bone.

On March 16 Mr. Dunn operated, and made an incision along the margin of the jaw, extending forward from the angle. The skin was turned upwards, and the bone exposed was gouged into ; a thin plate of bone was found to cover a solid sarcomatous growth, the incision was therefore enlarged, and the bone fully exposed. The molar and last bicuspid were removed, the mucous membrane divided and sawn through anterior to the mental foramen. The condyle was disarticulated from the glenoid cavity. The mucous membrane was sewn up so as to shut off the buccal cavity, and then after washing the wound the superficial sutures were inserted.

Progress.—The wound healed without suppuration, and now at the end of the month there is little deformity noticeable, and the patient is able to take solid food. Mr. Newland-Pedley is fitting her with a denture to counteract the tendency of the jaw to fall inwards.

The missing tooth was discovered on the inner side, having perforated the inner wall of the jaw midway between the upper and lower margins, just behind the line of section of the jaw.

OBITUARY.

Mr. James Parkinson.

MANY of our readers will share with us the regret which we feel in announcing the death of Mr. James Parkinson, who died on Tuesday, the 6th ult., at his residence, Rosenthal, East-bourne, in his eightieth year. He retired from practice a few years ago, but he must still be fresh in the memory of such of our members as used to attend our annual general meetings. His interest in professional progress was a life-long characteristic, and he was ever prominent in all efforts directed towards that object. He was an active supporter of the dental reform movement, which introduced and passed the Dentists Act of 1878, and for many years he served the British Dental Association as Treasurer. Mr. Parkinson has left two sons in the profession, who continue an unbroken line of dentists which covers a period of 175 years. He has left a widow and a numerous family, who gathered around him last June to celebrate his jubilee wedding, and to them we venture to convey the sincere sympathy of all his old friends who may read this brief memoir of a long and useful life.

MISCELLANEA.

THYMOL IN THE TREATMENT OF SENSITIVE DENTINE.—In deep-seated caries with great sensitiveness of the dentine, Dr. Kirk fills the cavity temporarily with gutta-percha, touching the mass before insertion with thymol crystals, which will, in addition to exerting an antiseptic action, obtund the sensitiveness of the dentine.

ACETANILID IN THE TREATMENT OF PAIN DUE TO THE APPLICATION OF ARSENIOUS ACID. — The distressing pain which sometimes accompanies the application of arsenious acid may, according to a writer to *Items of Interest*, be overcome by the administration of acetanilid in $2\frac{1}{2}$ grain doses, repeated hourly while the pain lasts.

PYROZONE IN THE TREATMENT OF PYORRHOEA ALVEOLARIS. —W. X. Sudduth recommends in the treatment of pyorrhœa alveolaris, a mouth wash of a 3 per cent. solution of pyrozone with a soda-mint tabloid dropped in the quantity used each time. The soda-mint overcomes the soapy taste of the pyrozone, hastens the liberation of the extra atom of oxygen, and increases antiseptic action.

SALOL AS A CAPPING FOR PULPS.—Salol is recommended by O. A. Weiss in *Items of Interest* as a valuable agent for capping pulps. It is non-irritant, non-escharotic and is easily applied without pressure. It may be mixed, if desired, with iodoform, aristol, or oxide of zinc.

ANIMALS AND STERILISED AIR.—As far as can be gathered from some recent publications by Dr. J. Kijanozin, of the University of Kieff, the inhalation of sterilised air decreases in a remarkable manner the assimilation of nitrogenous matter. This author kept animals in a specially devised apparatus and supplied them with air in an absolutely sterilised condition, and at the same time fed them with food as far as possible free from bacteria. The animals under these conditions lost weight more quickly than normally and excreted more nitrogen and carbon dioxide. The reason

suggested for this difference is that the micro-organisms when present aid in the decomposition and peptonising of the nitrogenous matter in the intestines. In a large number of the cases the animals died a few minutes, hours or days after the experiment, from a cause which, so far, Dr. Kijanozin has been unable to ascertain.

THE GUMS AS AN ELEMENT IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.—A red line on the gums is, according to the observation of Dr. Andreesen, of Yalta, frequently present in those, the subjects of pulmonary tubercle. In 800 patients examined with reference to this sign 92 were found to have it present, and of these, 69 were phthisical patients who presented Koch's bacilli in their expectoration, in addition to other pathognomonic signs. In the 23 other patients in whom the line was present there was a suspicion of tubercle. In 14 cases of confirmed pulmonary tuberculosis the red line was absent, as was also the cases in 33 patients in whom phthisis was suspected. The line is said to be easy to recognise on account of its intensely red colour, and cannot possibly be mistaken for the livid mark visible in persons suffering from chronic affections of the digestive tract. In the majority of cases in which the line existed, the affection was of a somewhat grave and acute character, while those cases in which the line was absent the evolution of the morbid symptom was slow and comparatively benign. A general improvement in the health of a phthisical patient is accompanied by a diminution in the vividness of the line, which again deepens if the pulmonary condition becomes worse. A similar mark is at times observed on the gums of pregnant women; the sign therefore in pregnancy and the puerperal state is not of the same value in respect of the diagnosis and prognosis of pulmonary tuberculosis as under other circumstances.

GOUTY PERICEMENTITIS.—In January, 1894, Dr. Peirce, in a communication to the *International Dental Journal*, drew attention to a form of pericementitis occurring in gouty people, the result of a calcic deposit at the apex of the tooth. Since that time much has been written on the question, and the views put forward by the author have been subjected to a large amount of criticism, there being some who assert that calcic

pericementitis always starts at the gum margin. An interesting paper by Dr. Darby in the April *Cosmos* throws some light upon this subject; he there recounts four cases in which the pericementitis certainly seems to have had its origin at the apex of the tooth. The paper, with a detailed account of the cases, will be found among the Minor Notices.

DISLOCATION OF THE JAW DURING AN EPILEPTIC FIT.—The *Lancet* for April 20 contains a short account of a case of dislocation of the jaw during an epileptic seizure. The patient, a youth 20 years of age, was an inmate of Colney Hatch Asylum, and was the subject of chronic mania, with delusions. The epileptic fits, which were frequent, generally occurred during the night, and it was during one of more than usual severity the right condyle became dislocated, its reduction being effected without difficulty when he had recovered from the seizure. A similar case is contained in the issue of the same journal for April 27.

A CURIOUS DEFORMITY OF THE FACE.—A curious congenital deformity of the left side of the face is given in the *Medical Week*. The patient, a child aged 15 months, who was under the care of Mr. Bloxam, had the external auditory meatus absent, together with the greater part of the external ear, the only remains being a lobulated fold of skin about one and a-quarter inches long. Towards the upper end where the fold joined the face in front were two small round depressions. About an inch and a-half above the lower border of the mandible, and about half way between the midline of the chin and the angle of the jaw, was a small puckered depression in the skin. Both sides of the mandible appeared equal in size; the left cheek, however, appeared larger than the right.

A CASE OF MACROCHEILIA.—The same journal contains the account of a case of macrocheilia, which was also under the care of Mr. Bloxam. The patient, a girl aged 12, presented a swelling, extending from just over the midline on the left side of the lower lip, and involving the whole of the right side. It also extended over the mucous membrane of the cheek for a short distance on the right side, and downwards to the

lower border of the inferior maxilla in front and on the right side. The swelling was of an irregular shape, the mucous membrane being lobulated, owing to the contraction of scar tissue. The right alveolus of the upper jaw was displaced inwards by pressure of the growth. Three large veins could be seen coursing over the growth, and patches of small vesicles existed on the right side, along with one very distinct patch on the left side of the chin. The tumour, which was solid to the touch, was freely movable over the deeper structures. One or two soft enlarged glands were present in the sub-maxillary region.

FOREIGN BODIES IN THE BRONCHI.—The greater frequency of foreign bodies in the right bronchus than the left has always been difficult to understand, because it is generally believed that the left bronchus lies more in a line with the trachea than the right. Kobler's investigations (*Wiener klin. Rundschau*, March 24, 1895) tend, however, to throw some light upon the question, for he shows from experiments made on bodies hardened with chromic acid, that the right bronchus and not the left is more in a line with the trachea. A factor, too, which determines which bronchus the foreign body enters is the position of the individual at the moment when the inspiration takes place.

MERCURIAL STOMATITIS.—In a short note to a recent issue of the *Medical Week*, Professor Finger states that he has found the following mouth wash beneficial in the local treatment of mercurial stomatitis:

R̄ Carbolic Acid 1 gramme, 50 centigrammes.
 Rectified Spirit }
 Distilled Water } ãã 75 grammes.

M. A teaspoonful to be used in a glass of water.

FIBRO-MYXOMA OF THE TONGUE.—At a recent meeting of the Royal Academy of Medicine in Ireland a somewhat rare tumour of the tongue was exhibited by Professor M'Weeney. It was encapsuled, translucent, yellowish in colour, and was about the size of the kernel of a hazel nut, and occurred in a man 23 years of age, who had no history of syphilis, either congenital or acquired. Histologically the growth proved to be a fibro-myxoma.

CONGENITAL CYST OF THE NECK CONTAINING TEETH.—At the same meeting an interesting cyst of the neck was also shown by the same author. The swelling was removed from the left side of the neck of a woman 23 years of age. The tumour, which was small at the time of birth, has increased steadily until, at the time of operation, it had attained the dimensions of a good-sized orange. It was subcutaneous, with deep attachments, and sprang from the level of the hyoid bone, to which it was adherent by a sort of process. To the naked eye it seemed made up of a dense fibroid stroma, in which were embedded numbers of cysts, averaging the size of a pea, filled with mucoid material. The trabeculæ between these cysts were dense and thick, and contained many bars and nodules of cartilage, as well as several immature-looking teeth. In the growth were also calcified corpora amylacea and other structures of a doubtful nature.

DEATH FROM SWALLOWING A DENTURE.—A death, the result of swallowing artificial teeth, is reported in the *Leeds Mercury* for April 16. A man aged 79 was eating a meal when he was observed to be choking, and on a friend putting his fingers into the patient's mouth it was found that the artificial teeth had passed into the throat. Attempts to remove them proved of no avail, and death took place from asphyxia before medical aid could be summoned.

PULP DEVITALISATION.—The following method for effecting painless destruction of the teeth is suggested by a writer to *Items of Interest*:—Fill a depressed disc with campho-phenique, to which is added enough aristol to make a syrupy mass; add two or three crystals, cocain-hydrochlorate, and in the centre of the disc, thus filled, put about a one-hundredth grain of pure arsenic (white oxide of arsenicum). The cavity having been properly cleansed and dried, invert the disc and contents over the exposure and insert a temporary stopping, carefully avoiding pressure.

A MODE OF APPLYING SILVER NITRATE.—A somewhat ingenious method of applying nitrate of silver is communicated by A. M. Holmes to *Items of Interest*. He recommends that a

piece of silver wire should be inserted into nitric acid and then inserted into the cavity. The action of the acid upon the silver forms the nitrate, and so the application can be made to the exact place desired.

A DANGER ATTENDING THE USE OF CORYL.—A correspondent, Mr. J. Dencer Whittles, writes that he had occasion to use a recently recharged cylinder of coryl, and after placing it in a small jug of hot water, and whilst carrying it from the workroom in the basement up a few steps to his consulting room, the cylinder exploded just as he emerged from off the steps—the bottom of the cylinder crashing through the jug, and the remaining portion violently striking the ceiling of the hall, bringing down a large amount of plaster. The nozzle was bent in two places, and the side of the cylinder flattened where it rebutted against the wall. It is satisfactory to think that the accident did not cause any bodily harm, and goes to show that the bottles containing coryl require to be made and tested as carefully as those used for storing nitrous oxide.

A METHOD OF HARDENING ALUMINIUM.—According to *Invention*, the hardness which aluminium is said to lack can be imparted to it by the addition of chromium. Certain precautions have to be taken in alloying the two metals, owing to the difference in their fusing points. If electrolysis is employed for this purpose, one or another of the known methods can be used, and the alumina, salts of alumina, cryolite, &c., treated direct with a determined quantity of granulated chromium, or chromium in any other suitable condition, or with the salts or oxides of chromium. Finally, an ingot of chrome aluminium is obtained which can subsequently be treated and transformed by known methods. The aluminium is said to be rendered as hard as chrome steel by this treatment.

ADULTERATION OF BEESWAX.—A. Kremel in the *Pharmaceutical Journal* shows that it is possible to produce, by mixing Japan wax, stearic acid, and ceresin in suitable proportions, a compound closely resembling genuine beeswax in appearance, possessing the same melting point and refracting index, yielding the same figures by Hübl's saponification process, and differing only in having a lower specific gravity. He

recommends that in all cases the specific gravity should be taken and qualitative tests applied for stearic acid, resin and Japan wax.

MELTING POINT OF GUMS.—The following table is useful in showing the average melting-points of some of the gums used in dental practice.

			FAHR.
Red copal resin from Angola	...	...	220-250°
Yellow „ „ Benguela	...	...	225-245°
Copal resin from Sierra Leone	...	...	180-185°
Hard Manila copal	...	...	190-205°
Kauri gum (New Zealand)	...	...	190-240°
Congo copal	...	...	225-245°

NEWCASTLE DENTAL HOSPITAL.—Not so long ago we were able to record the formation of a Society comprising the dental practitioners of Newcastle-on-Tyne and the surrounding country, and now comes the welcome news of the inauguration of a Dental Hospital for that city. A report of the proceedings in connection with the opening of this new hospital is given on another page, and a glance at it will suffice to show that the institution could hardly have been opened under more favourable circumstances, for in addition to an excellent dental staff we notice the names of Mr. Philipson and Mr. J. Morrison as consulting physician and surgeon respectively.

A NEW LOCAL DENTAL ASSOCIATION.—Mr. C. J. Cowell writes that an association of the registered and non-advertising dentists in the neighbourhood of Preston has been formed. As far as can be gathered from the notice received, the main object of this new Society seems to be directed towards the unregistered and those guilty of covering. The chairman of the Association is Mr. A. Miller.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the April sittings of the Dental Board of Examiners the following candidates passed the respective examinations:—First examination—D. David Davies, Liverpool; George P. Warton, Birkenhead. Final examination (and admitted

licentiates in dental surgery) — George Henry Bowden, Bristol; Francis H. J. Carter-Braine, London; James Waddell Dallachy, Glasgow; John Colquhoun Gardner, Glasgow; John William Alexander M'Gowan, Glasgow; Wright Sunderland, London.

A FRESH HONOUR TO SIR JOSEPH LISTER.—It is a great pleasure to have to record that fresh honours have fallen to Sir Joseph Lister, for he has recently been the recipient, at the hands of the Prince of Wales, of the Albert medal of the Society of Arts. The medal was awarded for his researches into the antiseptic treatment of wounds.

THE L.D.S.—A NEW REGULATION.—The following regulation will come into force at the next examination for the Licence in Dental Surgery, namely:—"A candidate who is referred at the examination for the Licence in Dental Surgery will be required to produce, before admission to re-examination, a certificate of three months' additional study at a general hospital and a special dental hospital, the precise attendances required at each hospital being left to the discretion at the respective hospital authorities."

WE note that Lilian Murray passed her final for the L.D.S., R.C.S.Edin., on May 3 (with honours), and has the honour of being the first British educated licentiate in dental surgery.

BOOKS RECEIVED.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION, at the Thirty-Third and Thirty-Fourth Annual Sessions held at Chicago. *Philadelphia*: The S. S. White Dental Manufacturing Company, 1895, pp. 229.

GENERAL SURGERY AND PATHOLOGY FOR DENTISTS, by Edmund W. Roughton, with numerous original illustrations. *London*: J. W. Segg and Co., 289 and 291, Regent Street; *Philadelphia*: S. S. White Dental Manufacturing Company, Chestnut Street, pp. 134. All rights reserved.

WORLD'S HISTORY AND REVIEW OF DENTISTRY, edited, com-

piled and revised by Herman Leumalm, D.D.S. *Chicago*: W. B. Conkey Company, 341-351, Dearborn Street, pp. 420.

OUR TEETH: CARE AND PRESERVATION, by Vooght Ditcham, M.D., D.D.S., L.D.S. *London*: Ballière, Tindall & Cox, 21 and 22, King William Street, Strand. 1895.

The Texas Dental Journal, The Ohio Dental Journal, The Medical Review, The Dental Practitioner and Advertiser, The British Journal of Dental Science, The Dental Cosmos, The Dental Weekly, The Pharmaceutical Journal, The Chemist and Druggist, Birmingham Medical Review, The Dominion Dental Journal, The American Journal of Ophthalmology, The Dental Record, Skandinaviska Tandläkareföreningens Tidskrift, The Transactions of the Odontological Society of Great Britain, The Transactions of the Guy's Hospital Dental Society, The Dental Journal (University of Michigan), Items of Interest, Guy's Hospital Gazette, Revue Internationale de Bibliographie Medicale, The Dental Record, The British Journal of Dental Science, The Dublin Journal of Medical Science, The International Journal of Microscopy and Natural Science, The Journal of the Postal Microscopical Society, April, 1895.

Letters and other Communications received from:—

R. E. Wood; J. Lees, A. B. Reck; C. J. Cowell; Florestan Agutter; J. H. Edward, Secretary of the Faculty of Physicians and Surgeons of Glasgow; F. V. Richardson; J. Butterworth; S. Spokes; I. Renshaw.

APPOINTMENT.

R. ERNEST WOOD, L.D.S.Eng., to be [Honorary Dental Surgeon to the Cottage Hospital, Harrogate, Yorks.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 6.

JUNE 15, 1895.

VOL. XVI.

The Annual General Meeting.

FROM the rough programme of the Annual General Meeting which appears in this issue, it will be seen that the Edinburgh gathering bids fair to be in every respect a success. The meetings for the discussion of papers, demonstrations and other business, will be held in the University of Edinburgh, while the social headquarters of the Association will be, as previously announced, at the Waterloo Hotel. A glance at the programme shows that the order to be followed is in most respects similar to previous years, the ball being set rolling on the evening of Wednesday, August 28, by a *Conversazione* to be given by the President-elect. On Thursday there is to be a meeting of the Representative Board, the remainder of the day being devoted to general business and the reading and discussion of papers. After the adjournment for business, it is proposed to arrange a trip to the Forth

Bridge, going by special train over the bridge and returning by boat across the river under the bridge. In the evening the Association will probably be entertained by the Lord Provost and other municipal dignitaries of Edinburgh, and as last year, the Presidential Address will form the *pièce de resistance* of the programme.

A meeting of the Benevolent Fund will be held on the Friday morning, the remainder of the morning being set aside for demonstrations. The discussion and reading of papers will occupy Friday afternoon, and at the conclusion of these, a trip will be taken to Arthur's Seat. The Annual Dinner will be held in the evening. Saturday is to be given up wholly to pleasure, the day being devoted to a special trip to Loch Lomond, and any formal meeting that may be necessary is to be held in the open air.

So far, several promises of papers have been received. Mr. C. Robbins will in one open up the question of the present aspect of amalgam fillings; Mr. Ezard will read one on Electricity in Dentistry; while Mr. Cunningham will in all probability, devote his paper to some dental political subject. In addition to these, Mr. Coxon and Dr. Wessen, of Stockholm, will read papers, while Dr. F. Hewitt will open up for discussion that much-vexed but important subject, namely, "the use of chloroform in dentistry."

The Microscopical Section will, we think be as successful as heretofore. Mr. Hopewell Smith is to contribute a paper on "Some Dental Lesions induced by Caries," while in addition there are to be demonstrations and short papers by several other members.

Indeed, everything argues well for a most successful meeting, and we feel certain all will return from Edinburgh with the pleasantest recollections, and those of us who remember our last Edinburgh meeting, and the special

reports of our social expeditions, will look forward to reading something from the pen of the same correspondent; while we may safely rely on some artistic humour from the inimitable designer of programmes, who seems to have a never-failing fund of the right sort of jokes at the tip of his pen.

The General Medical Council.

IN the address of the President of the Council there is but a brief, although a satisfactory, allusion to dental affairs. The visits of our assessor to the examining centres have commenced, and in due course an interesting report may be expected. That there is already a troubling of the waters may be assumed from a long letter addressed to the Council by a member of the Examining Board of the Royal College of Surgeons of Edinburgh, which we print elsewhere. The result of the examinations at the different boards, showing the number of rejected and accepted candidates, should also form interesting and instructive reading. We note with satisfaction the firm adherence of the Council to the demand for the universal maintenance of such a preliminary examination as that required from all home candidates for dental registration. The temporary confusion which seems to have arisen in the registration of dental students has been put right by a resolution, which kindly covers an oversight made in a recent resolution regarding the registration of medical students. Such an error need never have occurred had there been a dental member of the Council, and the incident shows, if further proof be needed, that what is now very generally admitted as a right is also a necessity.

The case of J. E. Dennan seems to have been treated with a solemn mediæval formality perfectly awe-inspiring,

and with a display of red tapeism which must gratify the greatest stickler for antiquated legal procedure. No doubt there is a certain becoming gravity attaching to all proceedings which concern the future of a man in trouble, but clearing the room to deliberate on the case of a man who has to "do" his ten years seems a proceeding which might be amusing were it not expensive. That some idea of the kind was passing in the mind of the President appears from the remark he made, that the consideration of the penal cases had cost £700.* The wish of the President for some other method of treating them is one which we hope the Council will take into consideration. Not that we expect to appropriate the time of the Council largely with such business, but we know from experience that one economy leads to another, and having an eye to the expensive character of the Council on the one hand, and the stability of the Dental Fund on the other, we welcome the faintest sign of diminishing expenditure. The further remark of the President, that £600 had been expended on the examination of the futile case of the "Jubilee Hospital," brought under its notice by the Medical Defence Union, may perhaps have some influence on those irresponsible persons who importune the Council to undertake work altogether beyond its power or the sphere of its operations. The absence of all such unavailing applications from the business of the last session, is a matter for congratulation to all who wish to see us advance on safe lines, however slow the progress may seem to those who have only to look on, or to those who think that beating the big drum is equivalent to success.

The financial portion of the report is always a matter of special interest, and it will be seen on perusal that the proportion of expenses borne by the Dentists' Fund gives us a

* See Report in *British Medical Journal*.

very near interest in the total expenditure of the Council. The return made for the sale of publications amounts to the paltry sum of £27 5s. 11d.; this includes the sale of copies of the *Dentists' Register*, and we cannot help thinking that a more extensive circulation of these important and most useful volumes would show a healthier interest in the condition of our profession amongst its members.

The efforts that have been made to obtain a dental representative on the Council have not yet been successful, but we need not despair on that account. The members of that body are beginning to recognise the desirability of such a colleague, and we doubt not but that the goodwill of the Council will ultimately devise a method of obtaining it, although the matter is beset by many difficulties.

ASSOCIATION INTELLIGENCE.

Representative Board.

A MEETING of the Representative Board was held at 40, Leicester Square, on June 8. Present:—S. J. Hutchinson, President, in the Chair; Storer Bennett, E. G. Betts (Treasurer), L. Matheson, J. H. Mummery, W. B. Paterson (Hon. Secretary), Lawrence Read, S. Spokes, J. Smith Turner (London); Alex. Kirby (Bedford); Breward Neale, F. Richards (Birmingham); A. A. Matthews (Bradford); G. Cunningham, R. P. Lennox, W. A. Rhodes (Cambridge); Col. R. Rogers (Cheltenham); J. H. Whatford (Eastbourne); H. B. Mason (Exeter); J. C. Storey (Hull); G. Brunton (Leeds); W. E. Harding (Shrewsbury); I. Renshaw (Rochdale); A. Kendrick (Taunton).

Letters regretting inability to attend were received from C. S. Tomes, W. Hern, E. Lloyd-Williams (London); Dr. J. Smith, W. Bowman Macleod (Edinburgh); Rees Price (Glasgow); J. T. Browne-Mason, T. A. Goard (Exeter); A. E. Donagan (Birmingham).

The PRESIDENT, with regret, informed the meeting of the illness of their Vice-President, Sir John Tomes, and expressed much sympathy with him in his suffering.

The minutes of the last meeting were read and confirmed.

On the motion of the Business Committee, a vote of thanks to Mr. W. H. Woodruff, the late Treasurer of the Association, was unanimously agreed to, and was ordered to be suitably inscribed on parchment and presented to him for his valued services.

The PRESIDENT informed the meeting that a vacancy had recently occurred on the Medical Council by the retirement of Sir John Simon, a Crown nominee, and that it had been filled up by the appointment of Dr. Thorne-Thorne, of the Local Government Board. He explained that prompt steps had been taken, to bring the urgent need for dental representation upon that Council, to the notice of the proper Authorities, and hoped that on a future occasion due recognition of their undoubted claims would be obtained.

The TREASURER gave his interim statement, which was duly accepted.

The HON. SECRETARY reported the following business in connection with the recent May Session of the Medical Council :—

EXAMINATIONS.

The results of the L.D.S. Examination held in 1894 showed :—

						Number of Candidates	
						Rejected.	Passed.
England	...	...	...	...	...	47	80
Edinburgh	...	...	...	...	...	1	14
Glasgow	...	...	...	...	...	10	10
Ireland (5 being <i>sine curriculo</i>)	...	...	...	...	...	1	6

INSPECTION OF EXAMINATIONS.

Mr. C. S. Tomes, the visitor appointed by the Medical Council to inspect and report upon these examinations, had already visited that of the Faculty of Physicians and Surgeons of Glasgow, and would continue his inspection of the rest during the present year.

APPLICATION FOR REGISTRATION.

Applications to be registered had been received from Mr. H. T. Osborne, D.D.S. Michigan, and C. D. Cassidy, D.D.S. Michigan, but were not acceded to ; it being resolved by the Council "that in the absence of any evidence to show that Mr. H. T. Osborne and Mr. C. D. Cassidy have passed through a curriculum equivalent to that demanded by the Medical Council from the Licensing Bodies of the United Kingdom, they be informed that they cannot be registered on the Diploma of D.D.S. University, Michigan."

MEDICAL ACTS AMENDMENT BILL.

In reply to the letter of the Representative Board concerning the Medical Acts Amendment Bill, the Medical Council intimated their readiness to consider the provisions of any Bill for amending the Medical Act (1858) or any subsequent Acts, which may be submitted to them by the Government.

REGISTRATION OF DENTAL STUDENTS.

The Registrar of the Medical Council having reported that he was not warranted in registering Dental Students until they had entered

a Hospital, it was decided, in view of the usual practice of a Dental Student to commence study as a pupil of a Dental practitioner, to alter the wording of the existing Regulation, and to allow the Student to date his professional study from the commencement of such period of pupillage; the regulations as regards Preliminary Examination remaining as heretofore.

DENTAL EDUCATION AND EXAMINATION COMMITTEE.

The Hon. Secretary said a new committee had been appointed by the Medical Council to consider and report upon all matters connected with dental examinations and the inspection and visitation of the same. The Committee to consist of six, viz., two members of the Council from each Division of the Kingdom, and to report annually at the May Session of the Council.

MEDICAL COUNCIL, DENTAL FINANCE.

Receipts for year ending Dec. 31, 1894 ...	...	£676 13 11
Expenditure for year ending Dec. 31, 1894 ...	...	£521 16 6

NAME ERASED FROM DENTISTS' REGISTER.

The name of John Eustace Dennon, who was convicted of obtaining money by false pretences and sentenced to ten years' penal servitude, was ordered to be struck off the Register.

The PRESIDENT announced that the Annual General Meeting of the Association in 1896 would be held in London in accordance with the Bye-laws. The question of converting that meeting into a special meeting of an International character had arisen, and was now presented to them for consideration by Mr. G. Cunningham in the following form, viz. :—

"At the World's Columbian Dental Congress held in Chicago, 1893, it was resolved—

"(1) 'That under similar circumstances to those which led to the Congress of Paris in 1889 and the World's Columbian Dental Congress in Chicago, 1893, it could not be otherwise than advantageous to the profession to have similar International Dental Congresses in the future' ;

"(2) 'That it should be delegated to the foreign Dental Societies to determine for their respective countries the time and place for the meeting of such future International Dental Congress.'

"It has been decided to hold an International Dental Congress in Paris in 1900, the date of the next Paris great Exhibition.

"It has been suggested by certain representatives and delegates of foreign countries at the last Congress (Chicago) that England would be a desirable place of meeting for a Congress in 1896 or 1897, and failing an invitation from England, Germany.

"It was suggested at the last Business Committee—

"That some time about the first week in August, 1896, might be a suitable time for such a Congress ;

"That a whole week might be devoted to the purposes of such a Congress ;

"That the British Dental Association might organise the various sections and appoint officers ;

"That the British Dental Association, together with additional help from its Metropolitan members, might furnish a substantial financial basis for the conduct of such a Congress, both as regards its business and social aspects ;

"That delegates of the leading foreign Dental Societies might receive cards of invitation, but that a sum of £1 towards the Expenses Fund be paid by all other foreign dentists attending."

Mr. CUNNINGHAM said he had been in correspondence with professional brethren in France, who had charge of the former Congress held in Paris, and who would organise that for 1900, and they had expressed a desire to see Congresses established, and would welcome one held in England in 1896. He considered the British Dental Association, as the National Society of the United Kingdom, the body best fitted to deal with the organisation of such a Congress, if established. Large funds might probably be forthcoming for the British Dental Association meeting in London in 1896 in the ordinary course, and, he assumed, a not very much larger sum would be needed to organise and carry through a Congress. He thought provincial members of the British Dental Association would help pecuniarily in such a case. At the request of the President, to put the matter in order, he moved "that the Representative Board approves of an International Dental Congress to be held in London in 1896 under the auspices of the British Dental Association."

Mr. ALEX. KIRBY seconded the motion.

Mr. BREWARD NEALE wished to know if there was any organisation already in existence, which dealt with Dental Congresses, such as there was in the medical profession.

The PRESIDENT replied he was not aware of any such official organisation.

Mr. CUNNINGHAM said there was no such recognised organisation for the purpose, like that which existed in the medical profession.

Mr. STORER BENNETT considered the last International Medical Congress, which was held in Rome, was of the nature, chiefly, of a huge picnic, and a failure in that. If a Medical Congress, with its generally recognised and powerful organisation, could not produce a better result in its scientific aspects than that Congress did, it was hardly likely a Dental Congress would be more successful. He thought August would be an unfortunate time to invite foreigners to see London at its best. He thought the position of the British Dental

Association in relation to the Congress would be a most anomalous one, and on general grounds he was of opinion that it would not be desirable to hold an International Meeting such as proposed.

Mr. MUMMERY considered some of the Medical Congresses held in the past to have been of interest from the scientific point of view, but he admitted that recently they had degenerated, especially so in the case of the last, in Rome. He was not aware that the idea of Dental Congresses had originated in Paris. He had heard of it before and elsewhere. It had been recently shown that there was hardly room to run a Dental Congress in connection with a medical one, and he feared the time was hardly yet ripe for a Dental Congress to be held alone.

Mr. BRUNTON thought a Dental Congress would be more likely to succeed if held alone. In his experience a Dental Section in conjunction with a Medical Congress resulted in the wooing away of the Dental Members by the attractions of the meetings of the other Medical sections.

The PRESIDENT read an extract from a letter of Mr. C. S. Tomes on the question, as follows :—"It was so difficult in our limited subject to get a sufficient number of really valuable papers, that the Congresses were liable to become merely 'social,' and if so, is it worth the doing? I think not!"

Mr. CUNNINGHAM asked if the opinion of the President-elect had been expressed.

The HON. SECRETARY said Mr. Macleod had in a general sense expressed approval of the British Dental Association's 1896 Meeting partaking of an international character.

Mr. CUNNINGHAM, in reply, said he should not refer to past Medical Congresses in general, but to the two Dental Congresses already held, viz., in Paris and Chicago. He thought much valuable scientific and practical work had resulted from those Congresses. As to the picnic aspect, he admitted that it existed, and, in his opinion, rightly so. The plea of August being an unfortunate month might apply, he thought, to the National Meeting of the British Dental Association, as well as to an International Meeting.

On the motion being put to the meeting, it was lost.

The HON. SECRETARY read to the meeting the programme at present sketched out for the Annual Meeting to be held in Edinburgh (a report of this appears on another page).

On the motion of the PRESIDENT the meeting expressed its approval of the programme, and left its carrying out in the hands of the Hon. Secretary and the members of the Local Committees in concert with the Business Committee.

Other formal business was transacted, and the meeting adjourned.

Election of Ten Members of the Representative Board.

THE following gentlemen were elected members of the Representative Board in 1892, and retire in August next by rotation in accordance with Bye-Law 18. They are eligible for re-election :—

Rees Price, L.D.S.Eng., Glasgow.

T. E. King, L.D.S.Eng., York.

R. P. Lennox, Cambridge.

E. Lloyd-Williams, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng., L.S.A., London.

A. Kirby, L.D.S.Eng., Bedford.

J. R. Brownlie, L.D.S.Eng., Glasgow.

J. T. Browne Mason, L.D.S.Eng., Exeter.

David Hepburn, L.D.S.Eng., London.

R. H. Woodhouse, M.R.C.S., L.D.S.Eng., L.S.A., London.

C. S. Tomes, F.R.S., M.A.Oxon., M.R.C.S., L.D.S.Eng., London.

Nominations of new candidates for election must be sent to the Hon. Secretary, 40, Leicester Square, on or before July 27 next, after which date ballot papers will be issued and the election proceeded with.

[N.B.—Nominations are of two kinds : (a) by branches, (b) by six members.]

W. B. PATERSON, *Hon. Sec.*

Programme of the Annual General Meeting.

To be held in Edinburgh, August 28 to 31, 1895.

THE local arrangements, so far made for this meeting, are as follows :—

THE MEETING WILL BE HELD IN THE UNIVERSITY OF
EDINBURGH.

The section of the University buildings generously granted by the Senate to the Association for use on this occasion will be found to afford more than ample accommodation for all the purposes of the meeting. The Association may justly feel proud to know that its claims to public notice have been thus fully recognised by the Senate of one of the oldest and most distinguished Universities in the kingdom.

The section for British Dental Association purposes is situated on the ground floor of the buildings, forming the north side of the quadrangle, and the various rooms are in more or less close proximity one to another.

The Court Room, a large and handsome apartment, carpeted and suitably furnished, and with its walls adorned with the portraits of eminent men associated with the University, will be set apart for the meetings of the Representative Board and the Benevolent Fund.

The Celtic and History Lecture Hall will be devoted to the public business of the Association. It has seating accommodation for 300 or more.

The Public Law Class Room will be utilised by the Microscopical Section, and for lantern exhibitions. A long strip of north-light window room may also be put at the disposal of this Section, if required.

The Associate Societies Hall has all conveniences for reading and writing, and will be used by members accordingly.

The Examination Hall will afford ample accommodation for the exhibits of the various dental manufacturing firms. It is about 80ft. long by 45ft. wide. A good display of dental instruments, fittings, and novelties may confidently be expected.

The secretaries' offices will be near to the main entrance, as also cloak room and post office.

The Demonstrations will be held in the Conservation Room of the new Dental Hospital, which is but a very short distance from the University, as the chair, lighting, and other arrangements will be more conveniently adapted there.

The Social Headquarters of the Association will be at the Waterloo Hotel. A special tariff has been arranged for, viz., 7s. 6d. single and 14s. double, for bed, breakfast and attendance. Other hotels immediately adjoining the Waterloo are the two Temperance Hotels, viz., Old Waverley Hotel, opposite, in Waterloo Place, tariff 4s. 7d.; Darling's Hotel next door, also in Waterloo Place (first class), tariff 6s.; the Balmoral and Palace in Princes Street, and many other hotels in that same handsome thoroughfare.

N.B.—As August is one of the busiest months for Scottish hotels it is suggested that members will be wise to write early and secure apartments, and especially so in the case of those wishing to put up at the Waterloo. Several hotels are disinclined to make special tariffs.

ORDER OF PROCEEDINGS.

Wednesday Evening, August 28.

Arrival of members in the city.

(Special saloons, dining or otherwise, may be arranged for members from the South, *via* Great Northern Railway, third class fares going and returning.)

9 p.m.—Informal gathering in the Victoria Hall of the Waterloo Hotel. Music, vocal and instrumental. Highland dancing by professionals. Smoking.

Thursday, August 29.

9.30 a.m.—Meeting of the Representative Board in the Court Room of the University.

10.30 a.m.—Annual General Meeting in the Celtic and History Lecture Hall. Valedictory address by the President, C. S. Tomes, F.R.S. Installation of the new President, W. Bowman Macleod, F.R.C.S.E.

1 p.m.—Luncheon interval.

2 p.m.—Reading and discussion of papers.

4.30 p.m.—Adjournment.

4.50 p.m.—Excursion to the Forth Bridge from Waverley Station. Over the Bridge to North Queensferry. Cross the ferry by steamer under the Bridge. Train from Dalmeny at 6.33, reaching Waverley at 7.5.

8.30 or 9 p.m.—Reception. Presidential Address, music, &c. (N.B.—The details of this function are at present in process of arrangement, and will be announced in the July Journal.)

Friday, August 30.

9.30 a.m.—Meeting of the subscribers and friends of the Dental Benevolent Fund in the Court Room of the University.

10.30 a.m.—Demonstrations at the Dental Hospital.

1 p.m.—Luncheon interval.

2 p.m.—Reading and discussion of papers.

4.30 p.m.—Adjournment.

Short excursions, *e.g.*, Arthur's Seat, Holyrood Palace, Old Edinburgh, &c., &c.

7.30 p.m.—Annual Dinner, Grand Hall, Waterloo Hotel.

Saturday, August 31.

The Scottish Branch will entertain the members and ladies at an excursion and luncheon at Loch Lomond. Arrangements as follows :—

9 or 9.30 a.m.—Special train from Waverley Station reaches Balloch 11.15 a.m. Special steamer on loch among the Islands up to Ardlui; return to Tarbet 1.30 p.m. Lunch at Tarbet Hotel.

2.30 p.m.—Concluding Business Meeting of the Association to be held on the Lawn, weather permitting. Walk to Arrochar, Loch Long, for those who wish.

5 p.m.—Steamer returns to Balloch, which is reached 6.15. Train to Edinburgh, Waverley Station, arrives 8.15 p.m.

N.B.—Members going south will be in time to arrange for leaving Edinburgh same evening.

(Some members, possibly, may prefer to remain at Loch Lomond, and if so, should book rooms at Tarbet Hotel early in advance.)

Arrangements for the entertainment of ladies accompanying Members to Edinburgh will be made for the early afternoons (*i.e.*, business hours) of Thursday and Friday. Mrs. Bowman Macleod, who has charge of these arrangements, will also entertain the ladies on Friday evening in the Victoria Hall of the Waterloo Hotel. (Music, light refreshments, &c.)

The local organisers of sections are: Mr. G. W. Watson, Microscopical; Mr. H. B. Ezard, Demonstrations; Mr. W. Bowman Macleod (President-elect) and Mr. J. Graham Munro, General and Entertainments.

The list of names of members who have promised PAPERS and DEMONSTRATIONS will be published in the succeeding numbers of the Journal for July and August. All Members desirous of reading papers or giving demonstrations are requested to communicate with

W. B. PATERSON,
Hon. Secretary.

COLOURING ALUMINIUM.—A method of colouring aluminium has lately been patented by Ida Ouaglio, of Berlin. The objects made from aluminium are first covered with zinc and then coloured black by a solution of either platinum, copper, nickel or antimony, a varnish being employed to protect the designs.

Successful Prosecutions.

THE Association has succeeded in obtaining convictions and fines in two cases at Grimsby, for use of titles employing by description that the users were dentists ; viz., in the case of Rycroft for using title

“ Rycroft's Dental Surgery ; ”

in the case of Browning—

“ Browning's Surgery.”

Both defendants pleaded guilty.

Owing to the short time available before going to press, further details must be held over until the July number.

Western Counties Branch.

A COUNCIL Meeting of the above branch was held at Weymouth, on Saturday, April 26, 1895.

Mr. A. Kendrick (President) was in the chair ; also present were— Messrs. J. J. H. Sanders, E. L. Dudley, T. Taylor Genge, H. B. Mason, E. Goodman, S. G. Yates, E. Brown and T. A. Goard.

Letters of apology were read from Messrs. J. T. Browne-Mason, R. Rogers, W. Helyar, G. McAdam, E. Apperly, J. L. Robertson and A. H. Mountford.

The minutes of the last meeting were read and confirmed. Messrs. W. J. Royal and S. H. Wallis were elected members.

The date of the Annual Meeting to be held at Barnstaple was fixed for July 19.

It was then resolved that Mr. T. Taylor Genge be invited to allow himself to be nominated for the Presidency of the meeting to be held at Bristol in 1896.

Messrs. E. L. Dudley and E. Goodman were nominated on behalf of the branch, as candidates for election to the Representative Board at the Annual Meeting to be held in Edinburgh.

A discussion then followed on various cases of covering, &c.

After the Council Meeting, an informal meeting of members was held at which the above-mentioned members were joined by Messrs. John Laws and S. H. Wallis.

Mr. SANDERS showed some scalers, a modification of Howe's pattern ; also a pair of forceps for the extraction of lower wisdoms after a pattern of his own.

Mr. GENGE showed some cases of continuous gum-work and a regulation case, which gave rise to a discussion.

Mr. LAWS showed models of a case of marked superior protrusion. He also showed a patient who had had her upper maxilla removed for sarcoma about two years previously. A conversation took place as to the best method of supplying a suitable denture.

In the evening, the members dined together, and altogether a very pleasant day was spent at the rather inaccessible watering town of Weymouth.

The Annual Meeting of the above branch will be held at Barnstaple on July 19, 1895. It is requested that members having any communications to bring forward, or who are willing to give demonstrations, will communicate as soon as possible with the secretary.

T. A. GOARD, *Hon. Sec.*

6, *Southernhay, Exeter.*

Scottish and West of Scotland Branches.

JOINT ANNUAL MEETING.

June 8, 1895.

THE Annual Meeting of the Scottish and West of Scotland Branches was held at Dollar on Saturday, June 8. The members met in the Castle Campbell Hotel, for the transaction of business, at 11 o'clock a.m.

At 12 o'clock a drive was arranged to Glen Eagle and Rumbling Bridge.

At 5 p.m., on the invitation of the Scottish Branch, the members and guests dined at the Castle Campbell Hotel.

A UNIFIED BRANCH FOR SCOTLAND.

Saturday, June 8, was a red-letter day in the history of the British Dental Association in Scotland, for on that day what has been long spoken of, the formation of one branch for all the members north of the Tweed, was accomplished. In the forenoon over thirty representatives of the Scottish and West of Scotland branches held, in the Castle Campbell Hotel, Dollar, their Annual Meeting, and on that occasion the formal steps for unification were taken.

The West of Scotland Branch first met—Mr. STIRLING (Ayr), president, in the chair—and dissolved. It was agreed to dispose of the funds in the following manner—£20 towards a dental hospital for Glasgow, £10 for the purchase of a book-case for the hospital, when built, and £10 to be carried to the funds of the unified branch. Votes of thanks to the president and office-bearers concluded the business.

Thereafter the Scottish Branch, under the presidency of Mr. W. Bowman Macleod, met and also dissolved. It was decided that, after paying all liabilities, £10 should be given to the fund of the unified branch, and that the remainder be given to the Edinburgh Dental School. Votes of thanks were awarded as in the other case.

Immediately afterwards the gentlemen who had hitherto constituted

both branches met. Mr. ANDREW WILSON (Edinburgh), presided. It was then unanimously resolved to amalgamate. A code of rules which had been passed by the Councils of the two old societies, and circulated among the members, was, on the motion of Mr. BIGGS (Glasgow), seconded by Mr. EZARD (Edinburgh), approved and adopted. It was agreed that the title of the amalgamated societies should be the "Scottish Branch." The following office-bearers were then elected:—President, Mr. W. Bowman Macleod (Edinburgh); Vice-presidents, Mr. Malcolm MacGregor (Edinburgh), and Mr. James McCash (Glasgow); Treasurer, Mr. Andrew Wilson (Edinburgh); joint Secretaries, Mr. Rees Price (Glasgow), and Mr. J. Graham Munro (Edinburgh); Members of Council, Messrs. Biggs (Glasgow); Campbell (Dundee); Durward and Amoores (Edinburgh); Dall (Glasgow); Dunlop (Kilmarnock); Fraser (Inverness); Stirling (Ayr); Wallace (Glasgow); Watson (Edinburgh); Williamson (Aberdeen), and Taylor (Glasgow).

Mr. MACLEOD, in accepting office, congratulated those present, and the profession in Scotland, on their having at last agreed to form one united branch. He thought such a union would, by the concentration of their energies, lend weight to their deliberations, and tend towards any movement which they might initiate being more readily recognised by the Central Executive. It would, further, by enabling the eastern and western brethren to meet frequently together on common ground, afford opportunity for a fuller interchange of professional views, the cultivation of professional fellowship, and the more expeditious furtherance of professional objects.

Mr. Biggs and Mr. Amoores were afterwards nominated to stand for election for the Representative Board of the British Dental Association, on the motion of Mr. PRICE, seconded by Mr. A. WILSON.

After lunch the members enjoyed a drive to Rumbling Bridge and Glen Devon in charming weather, returning to the hotel about five o'clock, where, on the invitation of the old Scottish Branch, they dined together.

At dinner Mr. Macleod occupied the chair, Mr. Lipscombe (Kilmarnock) acting as croupier. The guests were Dr. Strachan and Dr. Spence (Dollar); Mr. Gibson, representing the Commissioners of the town, and Mr. Hay, banker (Falkirk). After the usual loyal and patriotic toasts had been honoured, the PRESIDENT said they of the east very much regretted that they would not have an opportunity again of entertaining the members from the west, but he hoped they would live long and happily together. He proposed the toast of "Our Noble Selves," not as the new Scottish Branch, but as the British Dental Association of Great Britain and Ireland, an institution which was constituted after the passing of the Dentists Act for the purpose of assisting in the carrying out of that Act, and for the

purpose of seeing that the education necessary for obtaining a licence in dental surgery was provided at properly equipped schools. The toast was pledged enthusiastically.

The other toasts were "The Town and Trade of Dollar," proposed by the croupier, and replied to by Mr. Gibson: "The Medical Profession," proposed by Mr. Amooore, and replied to by Drs. Strachan and Spence; and "The Guests," proposed by Mr. Ezard, and replied to by Mr. Hay.

In the course of the proceedings Mr. Stirling took occasion to acknowledge, on behalf of members from the west, the excellent arrangements made for their entertainment by their brethren of the east.

Midland Counties Branch.

THE Fifteenth Annual Meeting will be held at Kingston-upon-Hull, on Thursday, Friday and Saturday, June 20, 21 and 22, 1895.

ORDER OF PROCEEDINGS.

Thursday, June 20, 8 p.m.—A room will be especially set apart at the Royal Station Hotel, where Members will please assemble on their arrival. This is intended to be informal for smoking and conversation, and there are no "dress" regulations. Items of song and music will be provided during the evening.

8 p.m.—Council Meeting in another room in the hotel.

Friday, June 21.—(Morning until luncheon time.) Hull Royal Infirmary, by kind permission of the Board of Management. Clinics.

9 a.m.—Out-patients' department, entrance, Brook Street. Extractions under nitrous oxide and air, according to Mr. Carter Braine's method, by W. T. Madin, L.D.S. (Birmingham). Extractions under nitrous oxide and oxygen (own method), by J. W. Dent, L.D.S. (Stockton-on-Tees).

9.30 to 11.30 a.m.—In the ante-room near Etherington Ward, entrance, Prospect Street. Demonstrations in Continuous Gum Work, by Harry Rose, L.D.S. (London).

9.30 to 11.30 a.m.—In the Etherington Ward, entrance, Prospect Street. (a) "Sponge Grafting in Cases of Absorbed, or Undeveloped Roots;" (b) "Gold Filling—using a Matrix;" (c) "A New Method of Flasking Rubber Dentures;" (Note (a) will not take place if suitable patient cannot be found), by George Brunton (Leeds). "Tinting Teeth for Special Cases," by G. Cunningham, M.A., L.D.S., D.M.D. Harvard (Cambridge). "Pivot," by H. P. Fernald, L.D.S., D.D.S. Boston (Cheltenham). "Gold Filling," or "Immediate Root Filling," by W. E. Harding, L.D.S. (Shrewsbury). "Immediate Root Filling by Acid. Sulph. Method," by Frank Harrison,

M.R.C.S., L.D.S. (Sheffield). "The Use of Soft Amalgam as a Protection for Temporary Dressings," by T. E. King, L.D.S. (York). "Taking an Impression for, and Making a Gold Crown;" "Making Tapering Screw Posts by means of a Pair of Pliers," by R. P. Lennox (Cambridge). "Newland-Pedley Crown," by H. Wallis, L.D.S. (Hull).

11.45 a.m.—Business Meeting (Members only), in the Royal Infirmary Board Room, Central Entrance, Prospect Street. Election of Officers and other Business. The President's (R. Rogers, L.D.S.) Valedictory Address. Introduction of the new President.

12.45 p.m.—Adjournment for luncheon.

1 p.m.—The President-elect, J. Chas. Storey, invites the Members and their lady friends to luncheon at the Royal Station Hotel.

2.15 p.m.—General Meeting (open to ladies and visitors), in the Mayor's Banqueting Chamber, at the Town Hall, Hull (by kind permission of the Mayor of Hull, Ald. Chas. Richardson). President's Inaugural Address, followed by words of welcome to the Association, by the Mayor of Hull. Casual Communications by J. A. Fothergill, M.R.C.S., L.D.S. (Darlington); and others. Observations on the Clinics.

3.15 p.m.—Paper by Frank Harrison, M.R.C.S., L.D.S. (Sheffield), on "Replantation."

3.45 p.m.—Symposium on the British Dental Association: (1) "What the British Dental Association has done for the Dental Profession," by I. Renshaw, L.D.S. (Rochdale). (2) "What the British Dental Association ought to do for our Profession," by T. Gaddes, M.D.U.S.A., L.D.S. (Harrogate). (3) "How the British Dental Association can help the Public to better Dental Service," by Thos. E. Constant, L.R.C.P., M.R.C.S., L.D.S. (Scarborough). Followed by discussion.

5 p.m.—The Mayoress of Hull, Mrs. Chas. Richardson, invites the Members and friends to afternoon tea, at the Town Hall.

7.15 p.m. (for 7.30).—Annual Dinner at the Royal Station Hotel (tickets 6s. each, to be obtained of the local secretary, T. Audas, L.D.S.). Each member can introduce a friend to all but the Business Meeting, and the friend's name should be entered in the List of Visitors. Extra luncheon tickets can be had from the Secretary on payment of 3s. 6d. each. Any application for extra dinner tickets must be accompanied with the name for whom they are intended.

Saturday, June 22.—Arrangements have been made for an excursion to Bampton Cliffs, which are near to Flamborough Head. Men have been engaged to show the process of cliff climbing for sea birds' eggs. The party will proceed by train (saloon carriages) to Bridlington, and on arrival will be driven about six miles to the coast. The return will be timed to arrive in Hull before five o'clock. Light refreshment will be provided by the Local Committee on the outward journey. Tickets (railway and drives), 5s. each person.

Providing the weather is fine, this is probably one of the most enjoyable excursions in the United Kingdom, the flocks of sea birds, the huge perpendicular cliffs, and the open sea, forming one scene of panoramic beauty to be long remembered. Hotels: Royal Station Hotel, at the North Eastern Terminus—bed, breakfast and attendance, from 6s. upwards, according to size and position of room. Private Temperance Hotel, "The Central," Jarratt Street.

The Saturday arrangements have been so planned that members may easily reach Scarborough, Filey, Ilkley, Harrogate, and other local health resorts, for the week end, and it is hoped that their close proximity will induce a good attendance at the meetings.

Will Members be good enough, *in any case*, to send their reply post cards as early as possible. This will much facilitate the arrangements of the Local Committee.

Drake Street, Rochdale.

I. RENSHAW, *Hon. Sec.*

Metropolitan Branch.

A MEETING for demonstrations will be held at the National Dental Hospital, Great Portland Street, on Thursday, the 20th inst. Chairs will be ready at 5 p.m. The following amongst others have promised to take part in the proceedings:—

Demonstrations:—J. H. Badcock, a Logan Crown; A. E. Baker, Gold Filling, using Morgan Hastings Foil; H. Baldwin, Soldering within the Mouth; W. R. Humby, Gold Filling in a Cervical Cavity; Wm. Rushton, Cohesive Filling without Rubber Dam; Sidney Spokes.

Microscopical Exhibits by F. J. Bennett and W. J. May.

Southern Counties Branch.

THE Annual Meeting will take place at the County Hotel, Salisbury, on Saturday, June 22, 1895. President: Joseph Walker, M.D., M.R.C.S., L.D.S.Eng. (London); Retiring President: J. H. Whatford, L.D.S.Eng. (Eastbourne).

10 a.m.—Council Meeting.

11.30 a.m.—Annual Meeting.—Council's Report, 1894-5. Valedictory Address by Mr. J. H. Whatford, L.D.S.Eng. Inaugural Address by Joseph Walker, M.D. Election of Officers and Council. Papers: Mr. H. Beadnell-Gill, L.D.S.Eng., will start a discussion on "Newland-Pedley's All Porcelain Crowns." Mr. Walter Harrison, L.D.S.Eng., D.M.D.Harv., "A Simple Method of Recording Operations." Demonstration: "Glass Inlays," by Mr. J. H. Redman,

L.D.S.Eng., D.D.S.Phil. ; Mr. J. H. Mummery, M.R.C.S., L.D.S. Eng., will show Microscopic Slides.

2 p.m.—Luncheon (an early dinner). The President invites the Members to luncheon at the County Hotel, also at

3.15 p.m.—To an Excursion to Old Sarum.

Nominations for the Council must be forwarded to the Hon. Sec. before June 17.

The retiring Councillors, Messrs. A. Gabell, J. H. Reinhardt, G. O. Richards and John Wood are ineligible for re-election.

Members are reminded that the subscription for the year became due on January 1.

J. H. REDMAN, Esq., L.D.S., D.D.S.Phil., *Hon. Treas.*
61, *Old Steine, Brighton.*

FRANK V. RICHARDSON, *Hon. Sec.*
1, *Sillwood Road, Brighton.*

Eastern Counties Branch.

THE Annual General Meeting will be held at the Royal Hotel, Grimsby, on Saturday, June 22, 1895, the President (Mr. Alex. Kirby, L.D.S.Eng.) in the chair.

PROGRAMME.

10.30 a.m.—Meeting for the transaction of business. Presidential Addresses. Papers, Demonstrations, and Casual Communications.

1.30 p.m.—Adjournment for luncheon, by invitation of the President-elect, Mr. R. P. Lennox.

The following communications have been promised :—(1) Mr. A. Hopewell Smith, M.R.C.S., L.R.C.P., L.D.S.Eng., will give a demonstration on "Photo Micrography," illustrated with the aid of the projection lantern. (2) Mr. T. M. Howkins, L.D.S.I., will show a patient lately the subject of a "Compound Fracture of the Superior Maxilla." Models of the case will be shown. (3) "Notes on the Treatment of the Temporary Teeth," by G. Cunningham, M.A.Cantab. L.D.S.Eng., D.M.D.Harv.

On the conclusion of the meeting it is proposed to make up a party for an excursion down the river as far as Spurn Point.

7.30 p.m.—Annual Dinner at the Royal Hotel. Charge 5s. without wine. Charge for bed and breakfast, 5s.

Special attention is called to the Midland Branch Annual Meeting, which will be held at Hull on June 20, 21 and 22. The President-elect (Mr. J. C. Storey) kindly invites any of our members who can attend, to lunch on Friday, the 21st, while the President-elect of the Eastern Counties Branch will welcome any members of the Midland Branch at lunch on Saturday, the 22nd inst. Several of our

members will avail themselves of this unique opportunity of fraternising with the members of the Midland Branch.

A train leaves Hull for Grimsby at 9 a.m., arriving at 10.8 a.m.

Book to Grimsby, *Docks Station*, for the Royal Hotel.

The Honorary Secretary will be glad to hear, as soon as possible, from members and friends who intend being present at the meeting.

W. A. RHODES, *Hon. Sec.*

3, *Silver Street, Cambridge,*

June 1, 1895.

Central Counties Branch.

THE Annual General Meeting of the above branch, under the Presidency of Mr. John Humphrys, will be held at the Birmingham Dental Hospital on Saturday, July 20, at 10.15. After the necessary business has been concluded the meeting will be occupied with Demonstrations (of which a full list will be published later on).

At 1.30 luncheon will be served at the Grand Hotel, where the Annual Dinner will take place at 6.30.

In the afternoon a reception will be held by the President at the Edgbaston Botanical Gardens.

ORIGINAL COMMUNICATIONS.

On Dr. Black's Recent Investigations into the Constitution of Teeth.

By CHARLES S. TOMES, M.A., F.R.S.

IN the May number of the *Dental Cosmos* there appears a paper by Dr. Black which embodies the results of a very large number of careful experiments into the chemical and physical characters of human teeth, the importance of which it is difficult to over-estimate.

As a matter of clinical experience, dentists have for a long time, and with great unanimity, been accustomed to suppose that there was a great difference in the manufacture, so to speak, of the teeth in different individuals, and to take this into account in their daily practice. For my own part I am firmly convinced that I can recognise a type of tooth at a glance which is specially prone to decay. And while, as Dr. Black recognises fully, much importance must always

be given to views which have obtained a wide acceptance, inasmuch as it is probable that they contain some germ of truth, there have been but few attempts made to put these differences upon a basis of experiment, though Dr. Black by the way appears to have overlooked Dr. Galippe's research, which, though on similar lines, was not so extensive as to cover all the ground of his own experiments.

Dr. Galippe took the specific gravities of a large number of teeth, which, he says, may be taken as roughly representing their proportionate richness in inorganic salts, though he does not pretend that it does so with rigid exactitude. He found that the average density of the upper teeth is a little greater than that of the lower, and that teeth of the right side are apt to be a little denser than those of the left. Moreover, that the milk teeth have a less specific gravity than the permanent teeth, and also that the roots of teeth have a lower specific gravity than their crowns, in which Dr. Black agrees with him and has found the same thing. Dr. Galippe also believed that the density of teeth increased with age, and that they might gain in inorganic constituents after their apparent completion. In point of chemical constitution he found that milk teeth contain a larger proportion of carbonates and less of other salts. I mention these results in justice to the older observer, and not by way of belittling Dr. Black's admirable research, for it appears to me that from an expression in the latter's paper—of which, however, only the first instalment has appeared—that he has overlooked the existence of any previous investigation upon these lines, and if he has done so he will be gratified to learn that the care and correctness of his own experiments is confirmed by their being in many points in complete accord with those of Dr. Galippe.

Dr. Black's paper requires careful study and affords plenty of material for thought. He has investigated the specific gravities of the dentine of a large number of teeth, has submitted uniform blocks to tests of elasticity and strength to resist crushing, and has estimated their constitution as regards proportion of lime salts, water, &c. His general results are not quite what one would have expected, for he fails to find physical or chemical differences which one might have anticipated between the teeth of individuals of such a kind as to enable us to classify them as poor or good teeth. He finds

that differences as great exist between teeth from the mouth of the same individual as between those of different individuals, or at all events as the difference in the average taken from a large number.

He finds that the specific gravities vary only a little in one hundred and eleven persons, and that although the specific gravities are in the main in correspondence with the amount of lime salts, that this is not strictly so in all cases.

He thinks that as regards physical hardness, the percentage of lime salts, which varies only from about 61 to 65.5 per cent., cannot make much difference, seeing that ivory which contains only, according to him, 47 per cent. of salts, is after all not so very much softer than dentine (the specific gravity of dentine according to his tables averages 2.09, and that of ivory 1.75).

I find that in my "Dental Anatomy" I give "the softer variety of ivory contains 60.9 and the harder as much as 64.4 per cent. of lime salts." Unfortunately I cannot find out, at the moment, the source from which I took this statement, which I find amongst other notes which I collected for the purpose of an article on ivory for the "Encyclopædia Britannica," but I was at considerable pains to refer to the latest authorities upon the subject, and the discrepancy is somewhat large.

It will be noticed, also, that the percentages of inorganic salts given by Dr. Black all rule rather lower than the analyses to which we have been accustomed to refer, but there may be a reason for this to be referred to subsequently, beyond and above the one given by him, viz., that he has given the percentages as in wet dentine, whereas most analyses give them for dry dentine. This is, I think, a mistake, as although normal dentine is wet, we know little or nothing as to the relation of the water to the other constituents, and the usage amongst chemists is under such circumstances to give the percentages in the dried body; his not having done so, at least in an additional table, renders it tiresome to compare his results with those of other investigators. Upon the whole we may take his researches as determining the point that there are no large differences in the amount of ash from teeth of variously classified individuals.

But we must be on our guard against going any further

than this statement; I do not wish for a moment to be a captious critic of a laborious research, for the results of which I have great admiration, and which is the most complete which exists on the subject, but there are several things in the methods adopted which leave loopholes for error in the inferences to be drawn, if not in the experiments themselves, and in the interest of scientific truth require close examination.

The method of estimating the quantity of lime salts was to burn away the organic matrix by exposing the section of dentine at first to a heat slightly below redness, and then for a quarter of an hour to white heat in a crucible. The ash was removed from the crucible and then weighed: now this removal would have been better avoided; the dentine could have been weighed in the crucible prior to ignition and then weighed again in the crucible after ignition, otherwise some loss is likely to occur. But there is another misleading circumstance in this method, unless it be checked by other (wet) analyses. The lime salts consist mainly of tribasic calcium phosphate, with which is associated a variable quantity of calcium carbonate, some analyses giving as much as 8 per cent. and others as little as 2 per cent. of carbonate. Now ignition, even in the presence of carbon, does not decompose calcium phosphate, which undergoes no change in weight during the process. But it is far otherwise with calcium or magnesium carbonate; these are decomposed, the carbonic acid being driven off and the oxide left; this involves a loss of weight approaching to one-half.

Thus:—

Calcium Carbonate, dried below red heat ...	grs. 11.35
Yielded after ignition for ten minutes ...	grs. 6.35

Loss by ignition	5'
----------------------	-----	-----	-----	-----	----

or something approaching half its weight.

Now let us see what amount of error in taking the ash as representing the total lime salts this may give rise to.

To give a rough example:—

Calcium Phosphate ...	...	...	...	grs. 67'
Calcium Carbonate ...	...	...	...	grs. 3'

Total Calcium Salts	grs. 70'
-------------------------	-----	-----	-----	----------

would give after ignition

Calcium Phosphate	...	...	...	...	grs. 67
Calcium Oxide	...	...	...	...	grs. 1.9
<hr/>					
Total Ash...	...	...	...	...	grs. 68.9
But again :—					
Calcium Phosphate	...	...	...	...	grs. 65
Calcium Carbonate	...	...	...	...	grs. 7
<hr/>					
Total Calcium Salts	...	...	...	...	grs. 72
would give					
Calcium Phosphate	...	...	...	...	grs. 65
Calcium Oxide	...	...	...	...	grs. 4.1
<hr/>					
Total ash	...	...	...	...	grs. 69.1

That is to say, these two mixtures after ignition would give almost the *same* weight (68.9 and 69.1), although before ignition there was a difference in the total lime salts of 2 in 70, or nearly 3 per cent. The proportions given as an example both fall far within the limits of variation in the proportion of phosphate and carbonate given by different analyses. We must, therefore, in the absence of any certain knowledge of the proportion of the constituent salts, reject the ash as being anything more than a rough approximation to the total salts present. In other words, if the chemical constituents of all the teeth were present in the same proportion, then the results given by the ash would be truly comparative with one another, although not true as respects the proportion of lime salts to organic matter, the salts being by this method in all cases too low, save when carbonates were absent altogether. It occurs to me as a possible explanation of the very low proportion of lime salts given by Dr. Black for ivory, that this fallacy may underlie the figures, and that ivory may be particularly rich in carbonates, but this is a mere guess.

The best way to get over this source of error is to moisten the ash with ammonium carbonate, so as to reconvert the lime into carbonate, and then expel the ammonia by heat short of redness, before weighing the ash.

Now the completeness of the destruction of the organic matter depends not upon the heat alone, but upon the access of oxygen, so as to burn away all the carbon, and it is uncertain whether oxygen gets access to the interior of a coherent mass such as a slice of dentine.

As a matter of fact, I myself have failed to so completely burn it out that the interior of the calcined mass is quite white, though the outside of course is white. This, however, is probably not a source of any great error.

There is another and more important point to be taken into account before Dr. Black's percentages can be unreservedly accepted.

The amounts of dentine with which he experimented, judging from the sample weighings given, were about .222 grm., or roughly speaking, 3 grs.; and I found myself, on cutting sections of teeth such as he described from about the neck, that this was quite as much as could generally be got from an average tooth.*

Now this quantity experimented upon is only $\frac{1}{500}$ part of 100 grms., so that experimental errors are multiplied by 500 in the percentages given if they are read as the constituents present in 100 grms.; if we take the 100 of the percentage tables as representing only 10 grms., then the errors are multiplied by 50.

To put it in a concrete form, an experimental error of .001 grms. will create in the percentage table an error of .45.

It will thus be clear that only the whole numbers in the percentage tables can be taken as wholly trustworthy, and that both decimal places must be struck off altogether as misleading.

This strikes at the root of the minute difference given for the age of the patient, and for the different teeth in the same individual, except where they mount into integrals, which they occasionally do. To repeat what is said above, the correctness of the two places of decimals, which are throughout given, involves correctness in experiment, and in weighing, to tenths of a milligramme, or roughly speaking, thousandths of a grain (really $\frac{1}{1000}$ of a grain), an exactitude that is of course quite unattainable.

What we may take as fully established by Dr. Black's researches then is:

* 2.1 grs. of dry dentine gave after ignition 1.55, loss .55, which gives as percentages 26.2 organic matter, 73.8 salts; after dissolving the ash in nitric acid, and again igniting, only very slight further loss occurred, so that the combustion was practically complete.

(1) That as regards mechanical strength and density there is an ample amount in all the teeth examined. (2) That there are no *large* differences in the amount of ash, and therefore no *large* differences in the percentage composition as regards organic matter and lime salts.

What we may take as shown as probable :

(1) That there is an increase in the proportion of lime salts as age advances. (2) That there is a difference in this respect between different teeth in the same mouth (this is *a priori* so improbable that it requires confirmation by further experiments).

What is not established, and what remains for further investigation by different methods :

(1) Whether there are constant differences, upon a smaller scale, *i.e.*, within the limits of the sources of error which I have pointed out.

(2) Whether material differences exist in the proportions of carbonates and phosphates ; *a priori* it would seem likely that the larger the proportion of carbonate, the more easily weak acids would attack it.

(3) Whether actual differences in solubility in weak acids of definite strength exist.

(4) Whether differences in the microscopical character exist.

(5) Whether chemical differences in the matrix exist, both as to combination with salts and as to its own nature, the latter being an almost hopelessly difficult subject of investigation.

(6) Whether it is in the enamel that differences of quality in teeth arise.

In conclusion of this preliminary notice of Dr. Black's results, I desire once more to say that they are very valuable, and it is because they are so that they call for minute examination. He will, I am sure, be the first to wish that they should be so criticised, and their limitation as to accuracy be pointed out ; this being done I propose in a future communication to discuss some of his results as to whether no such doubts arise.

For my own part, I should have liked some experiments recorded as upon teeth of that peculiar translucent appearance which we all recognise by the eye, difficult though they be to describe in words, as especially destructible by caries.

I should be greatly obliged if any of our readers who happen to extract translucent-looking teeth of apparent poor quality, with a good deal of the crown standing, would send them to me for analysis preserved in carbolic acid and water.

LEGAL INTELLIGENCE.

Doncaster County Court.

Heard May 31 before His Honour Judge Masterman, D.C.L.

WALLIS v. MASTERS.—Mr. Alfred Pearson Wallis, surgeon dentist, Hall Gate, Doncaster, brought an action against Mr. F. W. Masters, architect, St. Vincent's, Doncaster, for the recovery of £33 12s., for personal services rendered. The case was heard before a jury. Mr. George Banks, barrister (instructed by Mr. Thomas Piercy, Leeds), appeared for the plaintiff, and Mr. Bairstow, barrister (instructed by Messrs. Verity and Baddiley, of Doncaster), appeared for the defendant.

Mr. BANKS, in opening the case for the plaintiff: The claim was for £33 12s., and the account was sent in to Mr. Masters so long ago as December, 1892. A letter was then received from Mr. Masters asking for detailed particulars. The account opened on the 28th July, 1891, and there were various items in it of half a guinea for stoppings and other operations for Mrs., Miss, and Master Norman Masters, the remainder of the account being for the regulation of Miss Masters' teeth, for which 20½ guineas was charged, and for attendance of medical man. On February 18 last Mr. Wallis made a special application to Mr. Masters for a settlement of the account, and in that application stated that a settlement must be made by the first of May. Mr. Wallis had not been precipitate in the matter. First of all he sent in an account in January, 1893, and it was not until February, 1895, that he threatened to take these proceedings. Under date February 12, 1895, Messrs. Oxley and Coward, writing to plaintiff on behalf of the defendant, said that their client considered the charges exorbitant, and unless Mr. Wallis was prepared to make considerable abatement they were instructed to defend any proceedings. Defendant had paid £15 into court. Subsequently another firm of solicitors, who now represented the defendant, applied for particulars of the 20½ guineas. That 20½ guineas appeared to be the only item to which the defendant objected.

Mr. BANKS said that after two years' consideration defendant thought proper to quarrel with every item, and for the first time. With

regard to details asked for for the regulation of teeth, they might as well ask an artist for detailed particulars of the price for which he painted a picture. This was a case of superior protrusion of the teeth. In this instance, the operation had given perfect satisfaction.

Mr. WALLIS gave evidence bearing out the statement of counsel, and was then cross-examined at considerable length by Mr. Bairstow.

Asking about the time it took to perform the various operations, Mr. BAIRSTOW said, in reply to the Judge, that he should submit that plaintiff was not entitled to charge for work taking five minutes as much as he would charge for work taking half an hour.

The JUDGE: I shall tell the jury I do not agree with you, and it will be for them to say whom they believe.

COMPLAINANT said that the regulation of Miss Masters' teeth involved from twenty to thirty attendances. He had twenty-six appointments in his book.

Dr. ERNEST CATT, Scarborough, and Mr. FRANK HARRISON, surgeon dentists, were called for the plaintiff.

Mr. MASTERS, the defendant, said that he first of all took his daughter to have a tooth extracted, and by Mr. Wallis's advice chloroform was administered by a medical man. Plaintiff then said to him, "Why don't you have those two or three teeth put in their place?" He replied that he did not know it was possible. Plaintiff said it was an every-day occurrence, and he replied that if that was the case he did not see why he should not do his daughter's teeth. Plaintiff said, "Very well, we will make an appointment and I will see to it." He believed plaintiff said it would take some time, that the patient would have to wear a plate for a considerable time, and that the plate would want adjusting from time to time. She called as she went down to school. Sometimes the regulation took place whilst she waited in the ante-room, sometimes whilst she was in the passage, and at other times he did not do anything at all. She wore the apparatus for some months, and the wearing of the plate resulted in placing the teeth back as plaintiff had said, but he was surprised and astonished when he received the bill. Mr. Wallis never said it was a difficult operation. He laid stress upon the fact that it was a small operation.

Mr. LODGE, of Rotherham, examined by Mr. Bairstow, said that for gold fillings from one to two guineas was a reasonable charge. For the other fillings from 5s. to 10s. was a fair charge. For the regulation work described he thought from ten to twelve guineas was an outside fee. In reply to Mr. Banks, he said he did not think so much as 20 guineas was charged outside London.

Mr. BAIRSTOW, addressing the jury, said that what they were asked to do was to say whether these charges were reasonable or not. It was said that Mr. Wallis was a judge of the reasonableness of his own charges, and that if he could find one or two other persons who would charge the same prices he was entitled to charge them. It had been

decided over and over again that he was only entitled to charge a fair and reasonable price, and that he was liable to have its reasonableness decided by a jury. It was monstrous for any professional gentleman to say that he was entitled to fix his charges irrespective of the time which his services had occupied. If they turned to lawyers they could get half a dozen lawyers to justify whatever charges were made.

The JUDGE, summing up, said it was a pity that neither party appeared to have thought of the precaution of mentioning the probable cost of the work. The jury were the judges of the reasonableness of the plaintiff's charges, and he did not think they could get a better idea of what was reasonable than by taking the general charges made by similar professional men. The time the operation took was an element that need not be considered. One physician might take a very few minutes to perform a very delicate operation, and charge a duke more than he would charge a poor woman in a hospital. It appeared to him that the jury need not hesitate about giving the half-guinea for stopping; the regulation he had more hesitation in directing them upon. It was for them to decide.

The jury, after a few minutes' retirement, found a verdict for the plaintiff for the full amount, and the Judge certified for costs.—*The Doncaster Gazette*.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

General Medical Council.

May 29.

SIR RICHARD QUAIN, President, in the Chair.

REPORT FROM THE EDUCATION COMMITTEE ON THE REGISTRATION OF DENTAL STUDENTS.

Dr. BATTY TUKE: It will be in the recollection of the Council that last year we took away the right to register on pupilage for Medical students. At the time, I confess, the fact escaped me that Dental students should have power of being registered on pupilage, inasmuch as pupilage is an acknowledged and necessary part of the curriculum for Dental Students. The Report, as now in the hands of the Council, simply contains the recommendation that "the registration of Dental students shall be carried on at the Medical Council Office, in London, in the same manner as the existing Registration of Medical students—as herein-

before set forth—and subject to the same regulations as regards Preliminary Examinations, but in the case of Dental students, professional study may commence by pupillage with a Registered Dental Practitioner." I move the reception of that Report.

Dr. McALISTER seconded the motion, which was agreed to.

The Report is as follows:—

Representations having been made to the Registrar that No. 20 of the "Resolutions in regard to the Registration of Medical and Dental Students" does not now permit of Registration of Dental Students on entering upon pupillage with a Registered Dental Practitioner, the President has directed the matter to be laid before the Education Committee.

Resolution 20 directs that "the Registration of Dental Students shall be carried on at the Medical Council Office in London, in the same manner as the existing Registration of Medical Students." A motion adopted by the Council on December 4, 1894 (*Minutes*, vol. xxxi., p. 162), prescribes that Medical Students may be registered only upon entrance at "a University, School of Medicine, or recognised Teaching Institution." The usual practice for a Dental Student is to commence study as a pupil of a Dental Practitioner, a course quite in consonance with the Resolutions of the Council; but the Registrar holds that he is not warranted in registering students commencing Dental study in this way, inasmuch as pupillage is no longer accepted by the Council as a qualification for the Registration of Medical Students.

In order to remove all doubt on the subject, the Committee recommend that Resolution 20, regarding the Registration of Dental Students, be amended as follows:—

"20. The Registration of Dental Students shall be carried on at the Medical Council Office, in London, in the same manner as the existing Registration of Medical Students—as hereinbefore set forth—and subject to the same regulations as regards Preliminary Examinations, but in the case of Dental Students professional study may commence by pupillage with a Registered Dental Practitioner."

JOHN BATTY TUKE.

Sir PHILLIPS SMYLY: May I ask why should the Branch Councils not register these students?

Mr. MILLER: Dental students are all registered at this office under the Dentists Act.

Dr. McALISTER: The point was raised yesterday at the Committee and the answer was this. The registration of the dental practitioner is by the Act confined to the office in London, because the General Registrar has to carry it out. It is by the registration of dental practitioners and by the fee paid that the dental funds alone are provided. There are no fees for the registration of dental students, and therefore to throw the work upon local offices would be throwing work upon them for which we should have no return to the dental fund. I think that is the kind of reason which has made the rule what it is.

Dr. BATTY TUKE: I move the adoption of the Report which has now been received.

Dr. McALISTER seconded the motion, which was agreed to.

OTHER BUSINESS REFERRING TO APPLICATIONS FOR REGISTRATION.

1. From the following students, who desired to antedate their commencement of professional study, their Preliminary Examination having been fully completed before they commenced:—

Name.	Date of Preliminary Examination.	Date of Commencement of Professional Study.	Date of Registration.	Date to which Student desired to be Antedated.
Adams, Henry ...	Sept., '91	Oct. 5, '91	Jan. 11, '94	Oct. 5, '91
Apperson, Albert E...	June, '91	July 16, '88	Sept. 15, '91	June 1, '91
Carson, Thomas B. ...	Oct., '90	May 18, '89	July 6, '92	Oct. 1, '90
Carter, Charles E. ...	Dec., '91	Dec. 4, '91	Jan. 2, '92	Dec. 4, '91
Crombie, James M. P.	Oct., '91	April 20, '91	April 22, '95	Oct. 1, '91
Day, Kendrein J. ...	Dec., '91	Aug. 8, '91	July 11, '92	Dec. 1, '91
Duncalf, William J....	June, '94	Sept. 1, '94	Jan. 7, '95	Sept. 1, '94
Gibbs, John H. ...	Dec., '89	Feb. 10, '90	May 4, '95	Jan. 1, '91
Hansen, William ...	Mar., '91	April 14, '92	May 14, '95	April 14, '92
Hey, Stephen D. ...	June, '93	April 11, '92	Aug. 5, '93	June 1, '93
Homer, Samuel ...	June, '92	April 9, '87	Aug. 23, '92	June 1, '92
Lavan, Lloyd T. ...	June, '90	Oct. 15, '90	Sept. 25, '93	Oct. 15, '93
Mason, Edgar ...	Exempt	July 4, '77	Sept. 24, '94	April 1, '93
Naish, Godfray...	Dec., '92	Jan. 18, '90	Dec. 31, '92	Dec. 1, '92
Prickett, George F....	June, '93	Oct. 1, '93	Jan. 12, '95	Oct. 1, '93
Vaughan, John W. ...	Dec., '92	Aug. 6, '85	Feb. 2, '93	Dec. 1, '92

Resolved:—"That these applications be acceded to."

2. From the following student, who desired to antedate,

his preliminary examination having been only deficient in one subject at the time of commencement of professional study:—

Name.	Dates of Preliminary Examinations.	Date of Commencement of Professional Study.	Date of Registration.	Subject in which deficient.	Date to which Student desired to be Antedated.
Hinchliff, Chas. J.	{ June, '91 } { Dec., '91 }	Oct. 19, '91	Jan. 6, '92	Mechanics	Oct. 19, '91

Resolved:—“ That this application be *not acceded to.*”

3. Applications to be registered without further preliminary examination:—

(a) From Mr. Athol Lambert, who had gained a Second Class, Second Division, Certificate from the College of Preceptors in June, 1892, which included all the subjects required by the Council except Euclid II. and III., requesting that, as he had passed the Entrance Examination of the Central Technical College, which included Euclid (Books I.—IV.), he might be registered forthwith.

Resolved:—“ That this application be *not acceded to.*”

(b) From Fred Billing, who was articled to a Dental Surgeon (L.D.S. England) on June 8, 1891, after passing a College of Preceptors' Examination, which he was informed by this dentist to be sufficient, but who on applying for registration found that his master was not registered, though entitled to be so, and that his examination had been deficient in Euclid (II. and III.), and French, requesting that, having now passed in all subjects, he might be allowed to register as a student notwithstanding the remissness of his master in not placing his name on the *Dentists' Register*, and antedate.

Resolved:—“ That this application be *acceded to.*”

4. An application from Charles L. Mackaness, who in December, 1893, while at School, passed the ordinary College of Preceptors' Examination for a Second Class, Second Division Certificate, which included Euclid, Book I. only, requesting, through his father and master, that, as the omission of Euclid (a subject with which he was familiar) was an oversight, he might be allowed to register on passing in Euclid (II. and III.)

Resolved:—“ That this application be *not acceded to.*”

5. An application from Edgar E. Lacey, who only passed his Preliminary Examination in March, 1895, and desired to antedate to October 1, 1893, on the ground of having been engaged in Mechanical Dentistry for eight and a half years, the first three as a pupil, the remainder as an assistant.

Resolved :—" That this application be *not acceded to*."

6. From Mr. Alexander Crerar, L.R.C.P.Edin., &c., who passed his Preliminary Examination in April, 1890, and was registered as a dental student on May 29, 1895, requesting to be allowed to antedate to May 9, 1890, the date on which he commenced medical study.

Resolved :—" That this application be *acceded to*."

The following communication from the British Dental Association :—

" British Dental Association,

" 40, Leicester Square, London, W.C.

" *February 25, 1895.*

" GENTLEMEN.—On behalf of the British Dental Association, we beg to call your attention to the Draft Bill for the amendment of the *Medical Acts*, prepared by counsel for the British Medical Association, which will probably be laid before you for your approval. and to urge that it would be desirable if some more specific reference could be made to Dentistry in the said Bill ; and we are instructed that this can be done by slight verbal alterations.

" We are, gentlemen,

" Your obedient servants,

" S. J. HUTCHINSON,

" *President of the Representative Board.*

" W. B. PATERSON,

" *Hon. Secretary of the Association.*

" *To the PRESIDENT and MEMBERS of the*

" *GENERAL MEDICAL COUNCIL.*"

Resolved :—" That the British Dental Association be referred to the *Resolution* passed by the Executive Committee on May 27, 1895, on the subject of proposed amendments in the *Medical Acts*."

The following is the resolution referred to :—

" The Executive Committee recommend that the Council should intimate to the Parliamentary Bills Committee of the British Medical Association their readiness to consider the provisions of any Bill for

amending the *Medical Act* (1858), or any subsequent Acts which may be submitted to this Council by the Government."

EXECUTIVE COMMITTEE.

Minutes of Meeting, Monday, May 26, 1895.

DENTAL BUSINESS.

1. The REGISTRAR reported that the prescribed conditions having been duly fulfilled in each case, the names of the undermentioned persons had been restored to the *Dentists' Register*, from which they had been erased in conformity with the provisions of Section 12 of the *Dentists Act* (1878):—

Moxon, Henry James. Selvey, Robert Joseph.

Roberts, Stephen Charles. Smith, John.

Read:—Applications from Mr. H. T. Osborne and Mr. C. D. Cassidy, who both held the Diploma of D.D.S. University, Michigan, and who applied in November last to be registered as Dentists on that qualification; forwarding further information in regard to the course of study at that University, with the view of complying with the following *Resolution*, passed by the Executive Committee on November 26, 1894:—

Resolved:—"That Mr. Osborne and Mr. Cassidy be informed that they cannot be admitted to registration unless they can prove that they have passed through a curriculum equivalent to that demanded by the Medical Council from the Licensing Bodies of the United Kingdom." (*Minutes*, Vol. XXXI., p. 222.)

Resolved:—"That, in the absence of any evidence to show that Mr. H. T. Osborne and Mr. C. D. Cassidy have passed through a curriculum equivalent to that demanded by the Medical Council from the Licensing Bodies of the United Kingdom, they be informed that they cannot be registered on the Diploma of D.D.S. University, Michigan."

Read:—The following communication from the Royal College of Surgeons of Edinburgh:—

"Edinburgh, 11, Wemyss Place :

"May 18, 1895.

"DEAR SIR.—At Dr. Batty Tuke's request I forward to you, as Registrar of the General Medical Council, a copy of the last issue of Regulations for the Dental Diploma of the Royal College of Surgeons

of Edinburgh, which you will now find to correspond with the laws laid down by the General Medical Council ; and I shall be pleased to know that such is found to be the case.

"I would, however, at the same time direct attention to some alterations which suggest themselves as necessary in the existing Regulations of the Council, as codified in the draft report of the Education Committee of November, 1894.

"*First*.—At page 6 Students are required to have passed the Preliminary Examination, previous to commencing *Professional* studies. But these (p. 7) include Chemistry and Practical Chemistry, and these in the case of *Medical* Students may now be taken out along with Physics and Biology—*previous* to Registration. Ought not this privilege to be extended to *Dental* Students also?

"On the same page (7) the *duration* of the courses of *Materia Medica* and Practical Chemistry might be specified with advantage. In the special subjects there seems to be a tendency *sometimes* to give the lectures or instructions in an arbitrary way, until the number is complete ; and it might be well to rule that such lectures should be delivered in a systematic *sequence* during a *definite* time in each Winter or Summer Session, as in general subjects.

"In the Appendix containing the Regulations of the different British Dental Licensing Bodies, certain departures from the prescribed Curriculum of the General Council present themselves, and to which attention might be directed.

"Thus, on p. 9, the Royal College of Surgeons of England only requires a certificate of having '*received instruction* in Chemistry,' instead of one showing a course of lectures having been attended for six months, and a course of Practical Chemistry having been attended in a similar manner, as enjoined on p. 7. And again at (a) on p. 9, only *one* course of six months' Anatomy—assuming a '*Winter Session*' to mean this—is required instead of one course and *another* of the Anatomy of the Head and Neck—or a *second* course of Anatomy.

"On p. 10 again, not only Chemistry, but so important and practical a subject as *Materia Medica* is allowed to be attended along with Physics, *under the course of 'instruction'* in this branch, and without any separate lectures upon it being mentioned at all. While in the *subjects of 'Examination for the L.D.S.'* on the same page, Chemistry, *Materia Medica* and Medicine are omitted altogether.

"The Royal College of Surgeons of Edinburgh Regulations have been corrected, as will be seen. A course of '*demonstrations*,' as they are called, but which are advanced Anatomy Lectures, is substituted for the systematic course, being *repeated* during a second six months—and the General Hospital Attendance is corrected to twelve months with Clinical Instruction.

"The Royal College of Surgeons of Ireland appears, in its Dental

Curriculum, to omit *Medicine* and *Materia Medica* altogether, as no mention of them is made on pp. 14, 15 or 16 of their Regulations given in the Appendix.

"These I trouble you with, as they seem points which it would be advantageous to look into, so that a general uniformity in the Curriculum and Examinations of the different Licensing Bodies might be secured, while the Council has the matter under consideration, at any rate. And apologising for the long letter I am submitting, believe me,

"Yours very truly,

"J. SMITH, M.D."

"W. J. C. MILLER, Esq., B.A.

Resolved :—"That the letter of Dr. J. Smith in regard to the regulations in dentistry of the Royal College of Surgeons of Edinburgh be referred to the Education Committee for report at the next meeting of the General Council."

June 3.

SIR RICHARD QUAIN, Bart., President, in the Chair.

John Eustace Dennan, registered as in practice before July 22, 1878, was summoned to appear before the Council to answer the following charge, namely, "That he was convicted at the Central Criminal Court on January 7, 1895, of obtaining money by false pretences, and sentenced to ten years' penal servitude."

Mr. Muir Mackenzie attended as Legal Assessor. Mr. John Eustace Dennan was not present.

The REGISTRAR said the following Report had been sent in from the Dental Committee on the facts in regard to the case of John Eustace Dennan :—

REPORT ON THE CASE OF JOHN EUSTACE DENNAN.

The case of John Eustace Dennan having been referred to them by the Executive Committee to ascertain the facts in regard to such case, the Dental Committee find the facts to be as follows :—

(1) That John Eustace Dennan was registered in the *Dentists' Register* on July 31, 1879, as having been in practice before July 22, 1878, and with the address 49, Talbot Road, Bayswater, London, W.

(2) That John Eustace Dennan was at the Central Criminal Court on January 7, 1895, convicted of unlawfully obtaining money by false pretences and sentenced to ten years' penal

servitude as appears by the Certificate of his conviction now put in.

(3) The Committee recommend the Council to remove the name of John Eustace Dennan from the *Dentists' Register*.

CERTIFICATE OF CONVICTION.

Central Criminal Court (to wit). } These are to certify that at the General Session of the delivery of the Queen's Gaol of Newgate and other prisons, holden for the Jurisdiction of the Central Criminal Court at Justice Hall, in the Old Bailey, in the suburbs of the City of London, on Monday, the 7th day of January, in the year of our Lord 1895, before certain Justices of our said Lady the Queen, assigned to deliver the said Gaols of the prisoners therein, being John Eustace Dennan, otherwise known as John Eustace, was in due form of Law convicted on a certain Indictment against him for unlawfully obtaining by false pretences from Maud Easterbrook the sum of two shillings and sixpence, and from Maud Annie Wood the sum of five shillings, in each case with intent to defraud against the Statute, &c., and against the peace, &c., and the said John Eustace Dennan, otherwise known as John Eustace, was thereupon ordered to be kept in penal servitude ten years.

Dated the 21st day of January, 1895.

H. K. AVORY,

Clerk of the said Court.

Mr. WHEELHOUSE moved that the name of John Eustace Dennan be removed from the Register.

Mr. BRYANT seconded the motion.

Dr. GLOVER: Before that is put I should like to ask Mr. Muir Mackenzie if he could give us any particulars of the case. I see he is charged with having defrauded persons of 7s. 6d. Do you know if there is anything in this man's previous history?

Mr. MUIR MACKENZIE: The only official knowledge that the Council has is the certificate of conviction, on which the Council usually acts under the Statute. Mr. Dennan himself has written a very long memorial complaining that his trial was an unfair one. As the trial, however, was before a judge of the High Court and a jury, and he was convicted, and sentenced to ten years' penal servitude, I apprehend, though I have not read through all the proceedings, that the small sum of money was simply taken as one indictment. It is usual to indict upon one charge which may represent many

others. When a man has embezzled several sums of money we indict him for only one.

Strangers having withdrawn, the Council deliberated on the case, and on the re-admission of strangers the PRESIDENT stated that the Council had resolved to direct the Registrar to erase the name of John Eustace Dennon from the *Dentists' Register*.

Odontological Society of Great Britain.

THE Annual General Meeting of this Society was held on Monday, June 10. The report of the proceedings will be published in our next issue.

Students' Society, Dental Hospital of London.

AN ordinary general meeting was held Monday, May 20, 1895. The following new members were admitted:—Messrs. S. D. Hey, H. C. Hessenauer, J. H. Robertson, T. C. Myers.

Mr. H. DUNLOP showed a model of a boy's mouth, aged 9 years, the permanent left upper central incisor being united by true gemination to a supernumerary tooth placed at its mesial side. The crowns were united throughout their whole length, but the condition of the roots could not be ascertained as the teeth were not extracted. He remarked that true gemination was a rare condition, but when it did occur was usually found uniting a central and a lateral, or a central and a supernumerary tooth. A few cases of molar teeth united by true gemination had been recorded. He also showed a left upper second molar with very abnormal roots. The three roots as they left the crown were divergent, and the last third of each was bent upon itself at a right angle. The condition was probably the result of pressure applied before the roots were completely calcified.

Mr. DOUGLAS exhibited a model showing an upper left lateral tooth, the root of which had been split longitudinally by the slipping of a gold plugger, whilst the operator was using great force in building up a gold tip on the adjoining canine. The accident took place in Manilla about five years ago, and since then the patient had almost constantly been troubled with small abscesses at the apex of the fractured root. The affected tooth had risen considerably in its socket. He thought it was extremely rare for a fractured tooth to be retained for so long a period.

The PRESIDENT said that teeth fractured longitudinally did not as a rule last long, and that particles of food getting wedged in the fissure

was one of the causes that hastened their destruction. Fractured roots were best treated by adjusting a tightly fitting gold collar, the patient at the same time being told that the tooth probably could not be preserved for long.

Mr. W. J. MAY showed a molar tooth ; the crown was normal, but the roots were fused into a large globular mass. He thought it was probably an odontome.

Owing to indisposition, Mr. Parrôt was unable to read his paper on "Regulation Cases."

The PRESIDENT, therefore, kindly addressed the meeting on the subject of the "Zone of Translucency" in carious teeth, illustrating his remarks by the aid of lantern slides and specimens under the microscopes.

Mr. W. J. MAY and Mr. D. P. GABELL took part in the discussion which followed.

The PRESIDENT stated that the next meeting would take place on the second Monday in October, when Mr. H. W. Turner would read a paper on "Neuralgia and Referred Dental Pain."

The proceedings then terminated.

MINOR NOTICES AND CRITICAL ABSTRACTS

The Influence of Pregnancy upon Dental Caries.

By REUBEN PETERSON, M.D.

ARE the teeth more liable to become carious during pregnancy? It will be noticed that I begin this paper with a question. This is appropriate, for it is in this spirit that I desire to bring the subject before you. As it has not been within my province to make a critical examination of teeth affected with caries, it is evident that I must depend for my facts in regard to this disease upon the members of the dental profession. I find that the literature upon this subject is voluminous, and that not only has its course been accurately described, but also that many important discoveries have been made during the past few years which tend to make its etiology more clear.

I find also that the condition of pregnancy has been most carefully studied and all its phenomena thoroughly discussed. But when I endeavour to discover some recorded observations upon the subject which will occupy our attention this evening, I meet with a disappointment, for although I have carefully searched both the "Index Catalogue" and the "Index Medicus," I can find but little that has been written upon the relationship existing between pregnancy and dental caries. What little I have discovered has been in the form of short sentences, scattered through the different articles, and especially aggravating because of their brevity and assumption of the reality of certain conditions which are far from being proved. This proof must

be furnished by the dental surgeons, and not by general practitioners ; and if I shall by this paper arouse you to an increasing interest in caries affecting the pregnant female, so that you may discover some of the missing links in the chain of evidence, I shall feel more than satisfied.

There is little reason to question the probable correctness of the opinion generally held that the teeth are more liable to become carious during pregnancy. I am unable, however, to find any collected statistics upon the subject. I do not see why such observations should not be made and recorded, and the question settled beyond dispute. Surely, if an accurate history be taken of patients who seek your advice because of caries rapidly developing during the pregnant condition, you soon would be possessed of sufficient data to scientifically demonstrate the truth of the opinion which is almost universally held. But inasmuch as I am unable to find such records, I must assume, at least for the purpose of this paper, that pregnancy does have some influence in the production of dental caries.

The attempt to explain the nature of this influence is the task that is imposed upon me this evening. And in order that this may be done in an intelligent manner, I must ask that you bear in mind the chemico-parasitic theory of caries as expounded by Dr. Miller.

This, the modern theory of dental caries, relegates to the past all the other theories, which had for their foundation a purely chemical basis, or sought to explain the phenomena through the agency of a vital process having its origin within the pulp-cavity.

This being the case, how are we to explain our first proposition—namely, that pregnancy exerts a marked influence upon caries of the teeth? It is evident that the increased frequency with which caries is met with in pregnant patients must be due :—

(1) To influences which make themselves felt primarily upon the interior of the tooth ; or

(2) To influences acting primarily upon the external surfaces of the tooth ; or

(3) To influences which are directed at the same time both upon the external and internal surfaces.

(1) *Influences which make themselves felt primarily upon the interior of the tooth.*—I shall not weary you with any description of the theories which have been advanced to explain the etiology of dental caries, all of them based upon the idea that it was inflammatory in its nature and started from within. I shall simply examine two of the theories which are advanced at the present day to explain the cause of dental caries occurring during pregnancy. The first is one most commonly accepted as the explanation of the phenomena we are considering. It is, that the lime-salts are abstracted from the tooth in order to supply the demands of the growing fetus. I am unable to see why such a theory should be so universally accepted, for I am unable to find one scientific fact which can be brought forward in its support. In the absence of any microscopical examinations of the teeth during pregnancy for the purpose of ascertaining if an absorption of lime-salts is taking place, we are forced to consider the question more or less theoretically. If I am correct in my histology, the teeth are not supplied with any system of absorbents whereby the lime-salts can be abstracted for the purposes named. (Barrett, *Dental Practitioner*, vol. xxiv., April,

1893.) How, then, are they to be carried to the foetus from the tooth? The absence of any conveyance is certainly a serious drawback to any theory of the transportation of lime-salts.

For evident reasons, the teeth, of all the tissues in the body, are least liable to undergo the changes dependent upon nutrition. If this were not so, a few months of low diet would leave the hungry person without suitable teeth to masticate the much-desired food when obtained. If it were necessary to rob Peter to pay Paul, and abstract from the osseous system of the mother enough lime-salts to supply the needs of the foetus, why should the teeth be chosen? Why should not the bones, which are supplied with absorbent vessels, be selected for the sacrifice? But there are no evidences that these latter are affected in the way it is claimed the teeth are.

The endeavour has been made to show an analogy between osteomalacia and dental caries. At the first glance the two diseases have points of similarity. Pregnancy exerts a marked influence over both, the majority of cases of osteomalacia occurring during gestation. In both there is a loss of lime-salts. But microscopic examination of diseased structures in osteomalacia has shown that at some stages it is a true inflammation, which cannot be said of caries. Dr. George Dock, in a case of the former, reported before the American Association of Physicians (Transactions, 1894), says that the bacteriological origin of the disease must be given up, as it is without foundation. His explanation of the cause is that it is a tropho-neurosis. In a private communication he states that the difference in the two diseases lies in the fact that dental caries is due to the action of micro-organisms, while some other explanation must be sought for the origin of osteomalacia. I fail, moreover, to find any mention of the teeth being affected in the latter disease. I think, however, that there is another condition present in both diseases which is etiologically very important. I shall mention this later on.

The theory which has been advanced to explain the supposed withdrawal of the lime-salts from the tooth, is that just enough phosphates are taken into the system during pregnancy to supply the needs of the foetus, and that the natural waste of lime-salts of the tooth is not replaced, and hence the tooth suffers in the loss of its inorganic elements. This, to my mind, is a much more plausible theory than the first one considered, in that it does not deliberately make a free-booter of Dame Nature in charging her with robbing the tooth of its stored-up treasure. There is probably more or less waste and repair going on in the tooth all the time, and in the absence of known facts regarding the quantity of these products it would be within the range of possibility for the tooth to become impoverished were the supply of phosphates not sufficient. But here is the weak point in the theory. I find the following statement in the editorial article quoted above (Barrett, *Dental Practitioner*, vol. xxiv., April, 1893), the accuracy of which I cannot vouch for, as the references are not given: "The following computation has been made: If rice flour, which contains as little of the phosphates as any other common food, were the sole nutrition of a pregnant woman, and if she consumed barely enough to maintain a healthy existence, she might obtain from that alone double the amount that would be needed for herself and the growing child. It is well known that women always excrete phosphates during gestation." That the mother's organism is sufficiently supplied with lime-

salts during pregnancy, it would seem as if there were normally the excess mentioned above, if we consider that osteophytes are found in the inner surfaces of the calvaria and even in the pelvic bones. They have been found to exist in over one-half the cases of women dying after the fifth month of pregnancy. (Jaggard, "Am. Sys. Obst.," vol. i., p. 350.)

2. *Influences acting primarily upon the external surfaces of the teeth.* I believe that it is much more rational to endeavour to explain the influences of pregnancy upon dental caries by directing our study to the changes in the secretions of the oral cavity which may arise during gestation. If we can show that these secretions become more acid during this period we will have made a considerable advance in our investigation of the subject under consideration. For acid secretions will evidently furnish the most assistance to the entrance of the micro-organisms into the interior of the teeth, by causing a decalcification of the enamel, or furnishing a soil suitable to the rapid development of the bacteria. I am unable to find that the oral secretions have been tested in relation to their acidity during the pregnant condition. Such a series of examinations should be made, and would prove of great value in solving the problem before us. But there is considerable probability that such a condition does exist. We must look to the changes in the blood for an explanation of the phenomena. These changes have been carefully studied, and are well known to you all, and need not be enumerated. There is every reason to believe, however, that besides the increase in white corpuscles, fibrin, and water, there is a decided diminution in the alkalinity of the blood. In an important article ("Lithiasis in Pregnancy," *Journ. Am. Med. Assoc.*, 1887, vol. ix., No. 23), Dr. J. E. Kelly seeks to ascribe this condition of the blood to the influence of lithæmia upon the organism. The similarity between the symptoms produced by the lithæmic condition and those accompanying pregnancy are certainly striking, and have been set forth by the writer in a masterly manner. Of so much importance do I consider this article, as offering an explanation to the increased acidity of the secretions of the mouth, that I will quote the last paragraph of the paper entire: "As in the *résumé* of lithiasis, I wish to recall the persistent effects upon the system caused by the occurrence of a single pregnancy which manifesting themselves by various lesions not to be ascribed to any other influence, and indicating the permanent adoption by the constitution of a morbid action, which must be regarded as being closely related to lithiasis. In endeavouring to establish a parallel, if not an identity, between the constitutional tendency produced by lithiasis and pregnancy, I have indicated that both originate in a grave disturbance of nutrition; they present a similar modification of the blood; the pathological changes bear a close resemblance; the prominent functional disturbances are broadly identical, the numerous sequelæ are similar, and lastly, after one or more visitations, the constitution is prone to adopt the induced condition as a diathesis."

The disease gingivitis is well known to you all. Here it is a well-proven fact that the saliva is extremely acid. I understand also that this disease is more prevalent, and of greater severity, in persons of a rheumatic or gouty diathesis. These diseases are characterised by excess of uric acid in the system, and a diminution of alkalinity of the blood.

It is here that I would call attention once more to osteomalacia. Senator, in speaking of this disease (Ziemssen's "Cyclopædia," vol. xvi., p. 221), says: "It (diminished alkalinity of the blood) might result from the hyperæmic state of the marrow of the bones, which (as I have pointed out in speaking of rickets) may resemble the splenic tissue, to which it is closely allied, in being proved to generate an excess of certain organic acids when in a state of irritation (*e.g.*, in leukæmia.)" It is agreed that pregnancy is an essential factor in the production of this disease, although the exact manner in which it acts has not been discovered. It is not too much to expect that further investigations will throw more light upon this very obscure subject, and possibly aid us in understanding why there is a diminished alkalinity of the blood and an increase of the acid secretions during gestation. I doubt very much whether this position is tenable. It is probable that the acid by itself is too weak to act upon the enamel, and could only therefore aid by rendering the saliva still more acid, and more favourable to the subsequent action of the micro-organisms. Nature has taken precautions to guard the teeth against the temporary action of acids, by causing an increased flow of alkaline saliva, which neutralises or washes away the acid which has entered the oral cavity. If it were not for this provision, the teeth would necessarily suffer more than they now do. If it be true, as we suspect, that the saliva in pregnancy is abnormally acid, then much of its neutralising action would be lost, and the acid contained in the vomitus might do more injury than would be possible under ordinary circumstances. Still, my opinion is that the effect is but slight.

Another explanation for the increased frequency of caries during the pregnant condition has been offered by assuming that during this period the tooth brush is called into play less frequently, and hence the teeth decay from neglect. I only mention this as a fair sample of a number of theories I have met with in reviewing the literature of the subject, and not because I consider it of great value as throwing light upon the etiology of the disease under consideration. Pregnancy occurs at an age when habits in regard to personal cleanliness have become established, and the woman either customarily cleanses her teeth or neglects it altogether, as the case may be. If pregnancy were to have any effect, it would act as an incentive to the use of the tooth brush, because of the bad taste in the mouth, which is well known to exist at such times. It will be unnecessary to take up the third proposition in regard to the cause of pregnancy, as it has already been discussed when considering the other two.

I have purposely avoided any mention of treatment, as it has not been my intention to take up that portion of the subject, and because it really is unnecessary. If the proposition I have advanced this evening be correct, and if the frequency with which dental caries is met with during pregnancy be due to some condition of the blood, which in turn causes some changes in the composition of the secretions of the mouth, whereby a better habitat is offered for the growth of the destructive micro-organisms, then it necessarily will follow that the treatment of such a condition will naturally fall upon the family physician. It certainly would be interesting to watch the effect of treatment directed along this line, and to ascertain if an anti-lithæmic treatment would be productive of favourable results. It seems to me that such medication is indicated as much as that which is more

commonly used, as for example the administration of some form of lime-salts. The local treatment of the condition we have been studying, it is unnecessary to say, will fall naturally to the family dentist, and will be treated with his customary skill, and will be productive of the usual happy results.

SUMMARY.

1. It is probably true that dental caries is more liable to occur during pregnancy.
2. Dental caries is a disease characterised by a molecular disintegration of the normal constituents of the teeth.
3. The disease is caused by the action of certain pathogenic micro-organisms which produce lactic acid, which in turn decalcifies the enamel and exposes the dentine to the attacks of the bacteria.
4. It is improbable that the lime-salts are abstracted from the teeth to supply the needs of the growing foetus.
5. More than enough phosphates are ingested to supply the needs of both mother and child, hence the maternal teeth do not suffer from lack of nutrition.
6. During gestation, osteophytes are found, showing an excess of lime-salts in the system.
7. The true explanation must be looked for in some change in the oral secretions, which thereby furnish a more favourable soil for the development of the micro-organisms.
8. There is evidence to prove that the saliva is more acid during pregnancy.
9. This condition is probably due to changes in the blood, whereby its alkalinity is diminished.
10. The analogy between this and the lithæmic condition is striking.
11. Vomiting of pregnancy, while it may to some extent aid, cannot be considered a potent factor in the production of caries.
12. Neglect of the teeth during pregnancy cannot be proved to be more prevalent than at other times, and therefore should not be considered among the causes of caries.—*Cosmos*.

Lycoperdon for Alveolar Hæmorrhage.

BY C. BREWSTER, L.D.S., Montreal.

LYCOPERDON is a growth of nature, to whom we owe so many of our best remedies, and is found in most countries. It is one species of a very large family, however; and though most of the different kinds of the lycoperdon are useful as styptics, there is one special kind that is better than all others. It, however, takes considerable experience to discern the good from the indifferent. Lying in the fields for any great length of time, exposed to the various changes of atmosphere, it is subject to a certain deterioration which is only detected by careful examination. Fully a fourth of what I have had collected for me I have been obliged to throw away as useless.

As quinine in its own department—itself one of Nature's own special remedies—stands pre-eminent for its curative powers over all com-

petitors ; so, too, lycoperdon will be found supreme in its curative powers over all other styptics for the arrest of alveolar hæmorrhage. One of its peculiarities is its *healing power*. Plugging the alveolar cavity with any of the other known styptics, such as perchloride of iron, tannin and many other well-known remedies too numerous to mention, is invariably followed, after the bleeding has been arrested, by much inflammation and severe pain. When, however, we use the lycoperdon for plugging the cavity, we find the very opposite effect is produced ; the wound instead of presenting an angry, irritated appearance, and healing up very slowly, shows every inclination to heal by first intention, and not only that, but it shows a decided tendency to heal more rapidly than under ordinary circumstances. This can be easily proved by taking a case where two teeth have been extracted from the same mouth at the same time, and plugging one of them with lycoperdon and leaving the other to the usual process of nature. It will be found that the cavity that has been plugged will heal the fastest. Fortunately alveolar hæmorrhage is not of very frequent occurrence, but *unfortunately* it has a bad habit of springing itself on a dentist at the most unexpected times, and often when he is not prepared with the proper remedies to meet the case—his perchloride of iron has evaporated or looks as though it has gone bad, his tannin he cannot find, and so on, and so on. Somehow these bleeding cases have a bad habit of coming on in the night, or some other awkward time.

I have forgotten where I met the historical statement that when Cæsar landed in Britain the soldiers staunched their wounds with the puff-balls they found in the fields. In 1853, Dr. Benjamin Ward Richardson experimented with the form of fungus called lycoperdon giganteum, having been led to do so by witnessing its use to stupefy bees before robbing hives, a custom in use centuries ago in England. Dr. Richardson found that, exposed to heat, the fumes produced anæsthesia, and from 1853 to 1860 he thus narcotised more than one thousand animals, also making himself unconscious by its use. He recommended its revival as a styptic in alveolar hæmorrhage, but, for some reason unknown to me, it was not popularised. I am disposed to believe that it may have been due to the fact that the species of fungus with which he experimented, the lycoperdon giganteum, was not the best ; and it is possible, too, that the decrease of want of contractility in the blood-vessels, and especially of alveolar hæmorrhage, due to the more general use of fruits and better hygienic knowledge, made the matter of less importance to him than it was thirty years ago. There are still, however, very frequent cases of hæmorrhage. In all cases of anæmia, where the fibrin is in inefficient solution, and the blood itself is of feeble coagulating power, the vascular trunk will have feeble, contractile power, and hæmorrhage is apt to occur after tooth extraction.

Of course in marked hæmorrhage diathesis, or when excessive bleeding depends upon some previously existing disease, it is wise to avoid or defer surgical operations in the mouth, if possible. The regulation of diet and the constitutional precautions are outside the province of the dentist, and should be relegated to the family physician. However, when we meet with persistent hæmorrhage in our office, one of the first things to do is to discover if the flowing blood is a blood that will coagulate. If a little is caught in a spoon, and the fibrin is seen to clot in three minutes, the vascular or mechanical cause will

disappear of itself. But if the blood will not clot, we can rarely, if ever, fail by plugging the socket with the lycoperdon. I have seen failures from perchloride of iron, tannin, and the other styptics of the pharmacopœia. I have known perchloride of iron to be used at the boiling-point with no effect; and not long ago a case occurred in Montreal, one of spontaneous bleeding from the gums, in which no extraction had been performed, and notwithstanding the ligaturing of the carotid by one of our best surgeons, Dr. Roddick, the patient died.

Before passing altogether the anæsthetic properties of this fungus, I may mention that some years ago experiments were performed in Montreal, by Dr. Beers, by placing kittens in a chamber, to the outer surface of which there was a small iron box perforated beneath, and having a pipe opening into the box above. After freely distributing the fumes through the chamber, a kitten was put in. In six minutes it was insensible; remained thus for twenty minutes, having its ears clipped and otherwise treated without consciousness, and afterwards recovering and enjoying a good drink of milk.

If you inhale the lycoperdon through a hookah pipe, letting the fumes first pass through potash water, to clear them of carbonic acid, its effect is more lasting than chloroform. As a styptic in alveolar hæmorrhage, its effect is instantaneous. By removing anything in the way of thickened blood from the alveolar sockets, and opening the cellular tissue integument which invests them, bits of the fungus can be easily pressed in with the finger, and a piece of cork, spunk, lead or even cotton placed on top of it, and the jaws closed, and the patient kept quiet, cool and erect. It is wrong to let the patient lie down, or to give any alcoholic stimulant, as the object is to quiet the system.

I wish to draw attention to the fact that I have found the greatest virtue to lie in the genus lycoperdon bovista. The genus giganteum is the largest and easiest obtained; the bovista is small and scarce. The former is considered a distinct species, but the styptic properties of the bovista are much superior, containing a large proportion of phosphate of soda. It occurred to me to select the bovista, and medicate it with carbolic acid and camphor, by which means I have removed certain objections to it, and made it antiseptic as well as styptic.

I am indebted to Mr. Hoffman of the Geological Survey of Canada, for assistance in obtaining the following analysis of the ash of bovista gigantea. Mr. T. Nettleford, F.C.S., England, who made the analysis, speaking of the peculiar stalkers fungi growing close to the ground, infers that they collect the mineral matter from the soil:

	Per cent.	
Dry substance at 100° C.	8.35	
Water	91.65	
Ash	0.571	
Ash on dry substance	6.36	
Analysis of the ash. Calculated on plans calculated on residue.		
	Per cent.	Per cent.
Resoluble residue in hydrochloric acid	0.000	...
Alumina	0.107	15.66
Magnesia	0.000	2.93
Sulphuric acid (H. 2 So. 4)	0.060	8.79

	Per cent.	Per cent.
Silica (Sio 2)	0'003	0'44
Lime (Cro.) mere traces ... ..	...	...
Phosphate of soda	0'381	72'18

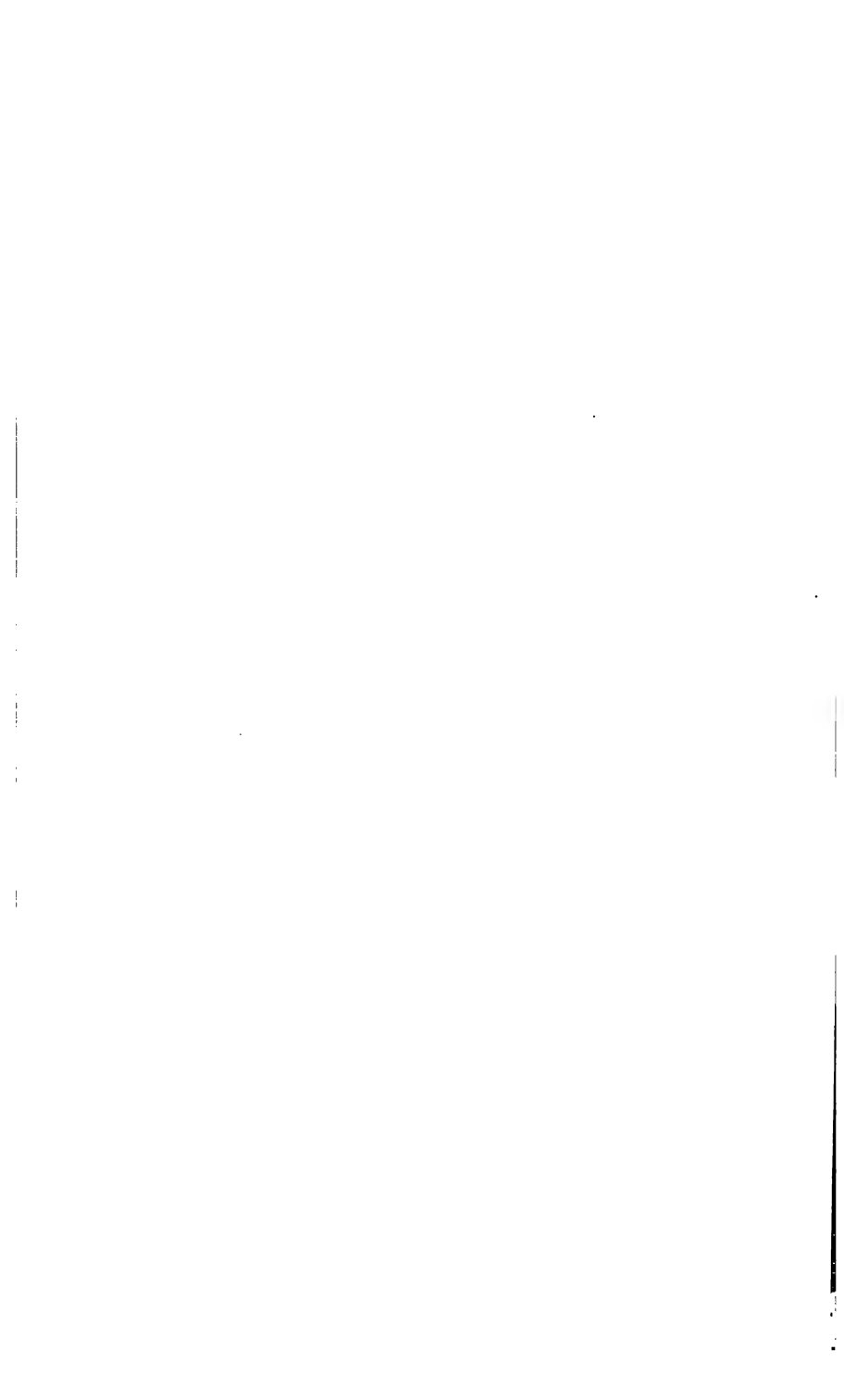
It is noticeable that phosphate of soda was once largely used to arrest hæmorrhage, and it appears that the styptic properties of the puff-ball is due to the excess of this substance.

Rubefacients and Vesicants.

By A. W. HARLAN, M.D., D.D.S.

WHAT is a rubefacient? This is the definition of Dunglison: "Rubefacient; producing redness, a medicine which produces redness of the skin. The action is called rubefaction, a gentle, local irritant. Vesicant; a blister, vesication, the action of a vesicant, the formation of blisters, vesicating blister, epispastic. Blister; vesicle or vesication, from vesicatories or other causes, also vesicant, vesicating; a blister plaster, substance which when applied to the skin irritates it and occasions serous secretion, raising the epidermis and inducing vesicles, as cantharides, mustard, ammonia, &c. Blisters are used as counter-irritants. A blister applied for a few hours to produce this effect is termed a fly-blisters. A perpetual blister is one kept open by appropriate dressing." The latter definition is also from Dunglison. Perhaps the simplest case of dental disease is pulpitis. Of what value would rubefaction be to the patient? Local anodynes and even local anæsthetics often fail to give relief, and the pulp is doomed to die from lack of appropriate measures. In many cases of this nature the application of hot water to the neck and above the ear on the affected side, by means of a few thicknesses of heavy towelling (six or eight thicknesses) soaked and partially wrung out, will prove efficacious, if continued from five to ten minutes. In nearly all cases of pain around erupting third molars, the use of water about 120° F. to 130° F., covering an area of from four to six inches from the focal point, will give the necessary relief in a few minutes. The direct application of a small jet of water in the mouth on the inflamed surface is both painful and injurious, as gentle unloading of the engorged vessels is not accomplished in this manner.

For minor ills of the gums (in pyorrhœa), rubefaction may be accomplished without vesication by using a saturated solution of menthol in alcohol, or even less than this, down to a 10 per cent. solution. Oil of peppermint, oil of turpentine or oil of cloves will produce reddening, and when used over a large area will often so alter the blood-current that there will not be anything more than swelling, without suppuration. Rubefaction may be produced with chloroform, camphor, and aqua ammonia. Mustard and capsicum are also used for this purpose. It must be remembered that the object of rubefaction is to draw the blood from a circumscribed inflamed area, and fill other unstimulated points, giving nature an opportunity to recover. I have been surprised and grieved to find that rubefaction is practised on too small a territory, not sufficient to give the desired relief. Estimated that an inflamed spot is one-half inch square, the rubefacient should cover ten times this area





TO ILLUSTRATE DESTRUCTION OF NOSE BY LUPUS; ADJUSTMENT OF
ARTIFICIAL NOSE.

By Arthur S. Underwood, M.R.C.S., L.D.S.

in a locality which will direct the flow of the blood elsewhere and relieve the tension on the arteries or arterioles. In acute pericementitis, in addition to rubefaction, it may be necessary to produce vesication—blistering. Many agents are used for this purpose, none of them very nicely or in appropriate places. A blister to relieve pericementitis in a superior central incisor should be made over the roots of the bicuspid, and the gingival margin of the gum, around the central incisor, should be painted at the same time with compound tincture of iodine. The blood-supply will be deflected and the resolvent effect of the iodine will soon be felt around the apex of the root. The gum must receive at least two paintings. This rule applied to all such cases will give much cause for congratulation from your clients. Ammonia, capsicum, cantharides or black mustard oil will produce blisters. Carbolic acid will produce a poor blister. Do not use zinc chloride for this purpose. A blister will do no good after the formation of pus around the apex of the root. Rubefaction may do something to alleviate the pain, but a blister increases it. Rubefaction and blistering for inflammation of the gums and the peridental membrane, facial neuralgia, as well as the pulp of a tooth, will be more efficient than leeching and purging.

A modification of Mayer's hammer may be used with good effect for rubefaction. Mayer's hammer is a steel disc dropped in boiling water before it is used on the mucous membrane or the skin. The one I use is about the size of a copper cent, and twice as thick, with a handle that is screwed into it while it is in the water; by applying this gently over three or four inches of space, great reddening is produced.

What the patient needs is a new sensation; this he gets with a blister or a rubefacient. When you are about to produce rubefaction or vesication, do it with your whole soul. Do it well; do not be afraid. Use blisters in inflammation, and rubefacients in congestion or stagnation. An ugly blister is not needed, as it will cause sloughing, and this is unnecessary around the mouth or on the face.—*Dental Practitioner and Advertiser.*

Destruction of Nose by Lupus: Adjustment of Artificial Nose.

By ARTHUR S. UNDERWOOD, M.R.C.S., L.D.S.

I HAVE recently restored the nose of a patient attending at King's College Hospital under the following circumstances: The patient, aged 28, female, had suffered from extensive lupus of the face, and her nose was, as far as the soft parts and cartilages were concerned, absent. A plastic operation was performed with perfect success, which, however, was not permanent. A second operation not being considered advisable, she was referred to me in the hope that some artificial restoration might be effected.

A model of the parts was taken, and to this a wax sketch of the proposed restoration was modelled; at the upper margin of the bridge a dental alloy wire was fixed, following the margin of the new nose in

the upper third. This wax sketch was reproduced in white vulcanite, and retained in place by a pair of spectacles attached to the dental alloy wire, and passing behind the patient's ears. These spectacles, which contained only plain glass, were excellently made and adapted by Mr. Hawes, of Gt. Marylebone Street; they served the double purpose of retaining the new nose in place and concealing the "join." The white rubber was then painted up to Nature with oil paint and the shiny surface dulled with violet powder.

The result was so far satisfactory that the patient was enabled to go about the world without being an object of curiosity and horror to others. The fact that the nose was artificial was not perceptible at a distance of two or three paces, and with a veil on it could not be detected at all.

I have found since that this method has been already carried out by my friend Mr. England, with equally good results.—*British Medical Journal*.

Goundrou or Anakhre (Gros Nez).

DR. MACLAUD, of the French Navy, gives* an interesting and very clear account of a singular affection of the bones of the face to which a considerable proportion—one or two in every 100 or 150—of the natives of certain villages on the Ivory Coast, West Africa, are subject. The disease is met with in the districts of Bettié, Krinjabo,



Indénié, Attié, Morénou, Baoulé, and Esikasso, that is to say, in the riveraine district of the lower Comoë. He has not heard of its existence elsewhere, unless it be in individuals from some of these districts.

Usually the disease commences soon after early childhood—unless in the case of adult visitors to the endemic districts, who may become affected in the same way. The earliest symptoms are severe and more

* *Archives de Médecine Navale*, January, 1895.

or less persistent frontal headache, a sanguineo-purulent discharge from the nostrils, and the formation of symmetrical swellings the size of a small bean or of an almond at the sides of the nose, apparently situated in the bone somewhere about the nasal process of the superior maxilla. The cartilages are not involved, and, although it is not stated, the nasal duct appears to remain intact. Headache and discharge persist for six months, or even for one year, the swellings gradually increasing. After a time the headache and discharge cease, but the swellings continue slowly to grow during the remainder of the patient's life, until finally they may acquire the size of an orange or even of an ostrich's egg, encroaching on the eyes, interfering with vision, and, finally, destroying these organs. There is no pain in the tumours themselves, which appear to consist of a shell of bone, and judging from the percussion note, to be hollow. The superjacent skin is not involved, being healthy looking and freely movable. The tumours are oval, the long axis directed downwards and slightly from within outwards; they look, when of moderate dimensions, like two half eggs laid alongside the nose, one on either side. The nostrils are bulged inwards and their lumen is considerably obstructed; but, in the later stages at all events, there is no breach of the mucous surface to be made out. The hard palate is not affected in any way.

Dr. Maclaud in all saw seven cases of this disease. He heard of many more. The cases were at all stages of development, from the initial stage of headache and discharge and where the tumour was no larger than a bean, to cases in which the tumour had attained enormous dimensions, the eyes had been destroyed, and the unhappy victim had become hideous in the extreme. He also saw a young chimpanzee with the same disease at an early stage.

No opportunity was afforded him of ascertaining the nature of these singular growths. He inclines to think that in the first instance the morbid process is started by the larvæ of some insect which had obtained entrance into the nostrils. The symmetry of the affection, its slowly but steadily progressive advance after the early acute stage has subsided, are difficult to account for by this otherwise plausible hypothesis. It would be interesting to know if other travellers have ever come across this or any similar affection.

The drawings, which we reproduce from the *Archives*, is that of a man, aged between 40 and 45, who had suffered from the disorder since puberty. Pressure was already being exerted on the eyeball by the tumour on the left side, and the patient stated that he expected that within two years he would lose his sight.—*British Medical Journal*.

Formaline.

By DR. G. FORSSMAN, Tandläkare, Stockholm.

FORMALINE is a solution of formaldehyd (methylaldehyd) CH_2O or H. COH in water. The water absorbs 40 per cent. of the gas.

Some months ago formaline attracted my attention, in consequence of the excellent qualities it possesses as a hardening fluid, and the idea occurred to me that advantage might be taken of this fact for dental practice. According to M. Snedel, if a finely dissolved solution

be sprayed on walls, wall paper, and furniture, its disinfecting power extends to a good depth, destroying pathogenic bacteria and their germs. Experiments have been made by several investigators with solutions of 1 per cent. to 10 per cent. in strength. A 1 per cent. solution is fully reliable as regards making wounds and instruments aseptic. Silicious earth absorbs formaldehyd, and little by little gives it off again, so may be used in the surgery and in the instrument cupboard.

A strong solution of formaline, 30 per cent., causes pain to the epidermis, the mucous membrane of the mouth, and in deep cavities, so that in the first case mentioned, the epidermis hardens, and is afterwards thrown off, while in the two latter cases no inconvenience at all arises. A solution of 1 per thousand can be used for rinsing the mouth and throat.

When treating partially inflamed pulps, I find that a 1—5 per cent. solution gives a satisfactory result, as besides being an antiseptic, formaline also acts as an astringent.

A filling can at once be placed above a cauterised and amputated pulp which has been treated with a 30 per cent. solution of formaline, provided a piece of carbonised wadding, dipped in the solution, be applied to the roots of the pulp. I have, however, only done this in those cases where the patients needed very rapid treatment, having otherwise inserted an application for one or two days, after which time the procedure just mentioned was undertaken. After being treated with such a solution for twenty-four hours the roots of the pulp are found to be gray and hard, though elastic.

For disinfecting teeth with gangrenous pulps, root canals that have been open for a long time, alveolar abscesses and periosteal inflammations, I have used the same with great success. In root canals solutions of 20—30 per cent., in alveoli or abscess cavities solutions of 1—5 per cent., according to the quantity it is possible to use. The pain that may possibly arise when injecting it in the alveolus, or when syringing it, is easily alleviated by cocaine.

It may appear that my statements concerning the strength of the solutions in the different cases are not very definite, but this is owing both to the short time, comparatively speaking, that I have been carrying on my investigations—only since last October—and that as a general rule, I decide the strength of the medicament used according to the special case and circumstances. As formaline has proved to have several qualities which to my knowledge are not combined in any other drug at present at our disposal, my intention in penning these lines is to call attention thereto.—*The British Journal of Dental Science.*

Orthochromatic Plates and Photo-Micrography.

A WRITER in the Glasgow *Evening Citizen* says that in photo-micrographic work the advantages of orthochromatic plates are perhaps more apparent than in any other branch of photography. With their aid the microscopist is now enabled to photograph many subjects that in years past were beyond the capabilities of collodion or an ordinary gelatino-bromide dry plate. "Among such subjects may be mentioned the sting and poison-sac of the honey bee, which, when stained, range in colour from a bright and dark yellow to the most delicate blue.

With the employment of an intermediate shield of yellow or canary-coloured screen, orthochromatic plates render these colour values most admirably, the only drawback being the coarseness of the grain in the resulting negatives. Were makers to put upon the market an orthochromatic plate of a less exalted degree of sensitiveness, whereby the coarseness of the grain would be much reduced, microscopists would eagerly accept such as a further distinct advance."—*Photography*.

REVIEWS AND NOTICES OF BOOKS.

DENTAL MICROSCOPY. By A. HOPEWELL SMITH. The Dental Manufacturing Company, Limited, Lexington Street, London. The S. S. White Dental Manufacturing Company, Chesnut Street, Philadelphia, U.S.A., 1895 (all rights reserved), 106 pp. with eight lithograph plates and index, price 6s.

A WORK of this character has long been needed, for the standard books which deal with general histology give hardly sufficient information to guide the worker in the preparation of the dental structures.

The subject matter is divided into eight chapters, of which the first is devoted to a description of the various instruments and appliances generally used in practical microscopy. Chapters two, three and four are devoted to the methods for the preparation of hard and soft tissues. In chapter five the methods of imbedding and cutting sections are dealt with; the subject of staining and mounting forming the title of chapter six. The injection of capillaries and the measurement and delineation of objects are discussed in the next chapter, while the last is devoted to photo-micrography. A word of praise must be given to the eight very excellent lithograph plates, which form a splendid series of illustrations of dental histology. The drawings are beautifully executed and cannot fail to be a great guide to the student. Altogether the book is a welcome addition to dental literature, and will, without doubt, prove useful to those for whom it is intended.

TRANSACTIONS OF THE AMERICAN DENTAL ASSOCIATION, at the Thirty-third and Thirty-fourth Annual Sessions held at Chicago, August, 1894. The S. S. White Dental Manufacturing Co., Philadelphia, 1895, pp. 229.

THIS volume, in addition to the ordinary routine business of the American Dental Association, contains several interesting papers which would well repay perusal. The final report by J. J. Patrick on the examination of Pre-historic Crania occupies close on thirty pages and contains some very valuable data. Another paper worthy of mention is one by T. W. Brophy on "A New Operation for the Exsection of the Inferior Dental Nerve." In addition to these, papers, reports and discussions are to be found in prosthetic and operative dentistry, dental education, materia medica and therapeutics, &c. The volume is carefully edited and does justice to the Publication Committee, Messrs. Cushing, Darby & Harlan.

GENERAL SURGERY AND PATHOLOGY FOR DENTISTS.

By EDMUND W ROUGHTON, 134 pp., with numerous original illustrations. J. P. Segg & Co., 289 & 291, Regent Street, London. S. S. White Dental Manufacturing Company, Chesnut Street, Philadelphia. (All rights reserved.)

THE author of this volume boldly states in his preface that "the object of the following pages is to supply the student of dentistry with an account of general surgery and pathology sufficiently comprehensive to enable him to practise his profession intelligently. It is hoped that they may save him the expense of purchasing a large work on surgery, and the difficulty and uncertainty of choosing for himself what to read and what to leave alone." In addition to this statement the volume bears the title "General Surgery and Pathology for Dentists." The first question that naturally suggests itself is, "Does dental surgery require a smaller knowledge of general pathology than aural and ophthalmic surgery or any other speciality?" To this question an emphatic answer of "no" is the only one that can be given. Dentistry as a profession is something beyond the mere filling of a tooth or insertion of an artificial denture, and every day brings the fact more prominently forward that there is a close and intimate connection between dental diseases and general systemic

conditions, and how, may be asked, can this connection ever be recognised by the dental practitioner unless he has an intimate knowledge of the whole of disease generally? A thorough groundwork of general pathology should be the backbone of the education of anyone who practises the "art of healing." That being obtained, the aural and ophthalmic surgeons look for further information in text-books specially devoted to these specialities, while the dental surgeon seeks his special knowledge in similar books. Such volumes, then, as the present should find no place in the library of the dental practitioner, for they tend to narrow the acquirement of knowledge and so put back the progress of dentistry. Leaving aside these general considerations, the matter contained in the book is quite insufficient even for the narrow limits of the examination. That opinion will no doubt receive endorsement at the hands of those whose duty it is to prepare students for the surgery required for the L.D.S. For instance, so important a subject as gangrene receives but little more than a page. Phagedæna, an important pathological process to the dental surgeon, receives seven lines; while such highly important subjects as septicæmia and pyæmia are summed up in less than two pages. Further examples could easily be given and would only go to show that the volume is of but the slightest value to the student or practitioner.

WORLD'S HISTORY AND REVIEW OF DENTISTRY.

Edited, compiled and revised by HERMAN LENNEMALM, D.D.S., from the most reliable and authentic resources available. A compendium of facts and historical data regarding the dental profession. Chicago: W. B. Cenkey Company, pp. 420.

THIS is a compendium of all matters relating to the practice of dentistry throughout the world. It includes the various dental Acts in force in different countries; the particulars relating to the acquirement of the several diplomas and degrees in dental surgery, as well as a list of the various schools where instruction can be obtained. A list of the dental associations and dental journals of each country is also given. The book is extremely useful for reference, and must have required great patience and much labour in its production.

MISCELLANEA.

THE TREATMENT OF CANCER BY SERO-THERAPY.—Two cases of cancer, apparently cured by sero-therapy, were shown at a recent meeting of the Académie des Sciences by M. Richet. The serum used was obtained as follows:—A tumour (osteo-sarcoma) which had been removed was rubbed up in a mortar with a little water. The liquid thus obtained was filtered through linen and injected in three animals (an ass and two dogs). This injection was not followed by any reaction, and in five, seven, and fifteen days afterwards the blood was drawn and the serum separated. The following are the notes, as given in the *Medical Press*, of the two cases:

“The first was that of a woman who had been operated on in October last for a tumour presenting the look of a fibro-sarcoma of the size of an orange, and adherent to the sixth, seventh, and eighth ribs, without, however, involving the tegument. In February, the tumour returned and rapidly assumed the size of a small orange. The treatment by the serum was commenced on March 12, and continued during forty days, at the dose of three syringes a day practised around the tumour. From March 25 the tumour commenced to diminish in size, and to-day only a small indurated nodule is found, and the general condition of the patient has improved considerably. The tumour, which was certainly of a cancerous nature, was thus *cured* by the injection of serum.

“The second case was that of a man, aged 44, who entered the hospital on March 27 last for a tumour in the epigastric region of the size of an orange, and diagnosed cancer of the stomach. Surgical intervention being considered impossible, the treatment by sero-therapy was decided and commenced on April 6 by a first injection of four cubic centimetres (four Pravaz syringes), and from that time up to the 24th of the same month as much as sixty-four centimetre cubes were injected. A general improvement in the condition of the patient promptly followed; the weight increased by seven pounds, and from April 10 the tumour began to diminish in volume, and at the time of speaking it can be no longer defined by the fingers. In this second case, as in the first, the improvement was rapid and incontestable.”

A CASE OF NECROSIS OF THE JAW IN A TABETIC PATIENT.—At a meeting of the Society of Dermatology and Syphilography of Paris, held on May 9, 1895, Dr. Castel exhibited a patient suffering from tabes who presented marked ulceration with necrosis of the palate. An interesting feature of the case is that the loss of teeth was accompanied by pain and inflammatory symptoms, the reverse of the usual condition, for exemption from pain has been claimed to be characteristic of the fall of the teeth in ataxic patients. In discussing the case, Dr. Fournier remarked that the inflammatory crisis accompanying the fall of the teeth appeared to be analogous to the œdemata, sometimes of considerable extent, which accompanies tabetic arthropathy; he also thought that histological examination of the sequestrum removed from the patient would show that the loss of the teeth was the result of a primary osteoporosis.

MISSING UPPER LATERAL INCISORS.—A correspondent, Mr. E. Duval, has forwarded to us a series of models showing an absence of upper lateral incisors. The models, five in number, are taken from the mouths of members of the same family, four brothers and one sister. In the case of four both lateral incisors are absent, while in the fifth one is present. The teeth present are well developed and the individuals in question are all tall, well proportioned and in the enjoyment of good health.

A CASE OF ACTINOMYCOSIS CURED BY THE ADMINISTRATION OF IODIDE OF POTASSIUM.—Another case of actinomycosis cured by the administration of iodide of potassium is recorded in the *Medical Week* for May 31. The patient was a man aged 54, and the disease had attacked the face and left temporo-maxillary region. In the early stages the affection was mistaken for a simple abscess of dental origin, but the symptoms becoming intensified, the parasitic nature of the disease was recognised. According to Professor Pincet, the infection of actinomycosis may be conveyed through plants, as well as grains of barley, wheat, &c., and in the case under notice the affection appears to have taken place through the gums, probably from stalks of

straw which the patient was in the habit of chewing on his walks in the country. Iodide of potassium in doses of 4 grammes daily effected a complete recovery, the antinomycosis being absorbed in the manner of a tertiary syphiloma.

PERFORATION OF THE PALATE IN A SUCKLING INFANT.—Dr. von Geuser exhibited at a meeting of the Imperio-Royal Medical Society of Vienna, on May 24, an infant of three months suffering from hereditary syphilis with perforation of the palate, although at birth there was no sign of syphilis. Such a condition is extremely rare, and according to Dr. Geuser only two cases are on record in the whole of medical literature.

THE TEETH OF CLIFF DWELLERS.—Dr. Greene contributes to the last issue of *Items of Interest* the result of an examination of twenty-six skulls of the cliff dwellers of Arizona and Colorado, who existed, it is estimated, about five thousand years ago. In only one instance did he meet with caries, but he found that in all the skulls the lower jaw protruded so as to bring the front teeth in direct occlusion, while abrasion was well marked in more than half of the teeth.

STANDARD SOLUTIONS OF HYDROGEN PEROXIDE.—In a short note contributed to *The International Dental Journal* for May, Dr. Endemann states that in his opinion a standard solution of hydrogen peroxide should answer the following tests: (1) It should contain at least fifteen volumes of available oxygen; (2) The quantity of free acids contained in 100 cubic centimetres should require not less than one cubic centimetre, and not more than three cubic centimetres of normal volumetric soda solution to be made neutral; (3) It should not contain any soluble baryta salts; (4) It must be free from sediment.

HYPERTROPHY OF THE PULP.—At the last meeting of the American Dental Association, Dr. J. Howard Gaskill narrated the details of a very interesting case of hypertrophy of the pulp.

A coloured boy, about 20 years years of age, had a pink spot on one of the central incisors, which could be distinctly seen through either the labial or the lingual wall. There was no external opening and no pain. Six weeks later the palatal wall broke down under mastication, and it was found that absorption had largely removed the dentine. Some two years afterwards a similar condition appeared in the other central incisor, and was shown to several dentists. Dr. Kirk suggested a course of treatment with iodide of arsenic and Fellow's hypophosphites, with the result, it is stated, that the pulp assumed its normal condition and the spot was hardly discernible.

ANTRAL EMPYEMA OF TUBERCULOUS ORIGIN.—A case of antral empyema, apparently of tuberculous origin, is recorded by J. Kekwick in the *British Journal of Dental Science* of May 15. The patient, a woman aged 30, complained of the usual symptoms indicative of antral empyema. The left upper second bicuspid was extracted and a free opening into the antrum made through the socket. For twelve months local treatment, combined with change of air and the administration of tonics, was carried out, but to no avail, the patient's condition remaining practically unchanged. The pus being of a curdy character, and the history of the patient led to a suspicion of tubercle, &c., and on the discharge being examined microscopically, the tubercle bacillus was found in large quantities. Constitutional treatment for tubercle, combined with the insufflation into the antrum every day of powdered iodoform, led to rapid improvement in the patient's condition, the discharge becoming less and the hectic condition which the patient had commenced to acquire being lost. The following reasons are given in support of the diagnosis: (1) the chronic course of the case, with no local causes such as loose sequestra; (2) the tuberculous character of the pus; (3) the amenability of the disease to iodoform; (4) the history of the patient (uncle died from phthisis; sisters suffering from phthisis; no signs of tubercle in the patient herself, but a queried history of tuberculous cervical glands—cicatrices); and (5) the bacilli in the pus which was washed directly out of the antrum through the nose.

A NEW VARIETY OF THE BACILLUS ANTHRACIS.—In experimenting on guinea-pigs with cultures of the bacillus anthracis, attenuated by the action of compressed oxygen, Chauveau and Phisalia have obtained a new variety of this microbe which they name the bacillus anthracis claviformis, on account of its key-like or bell-clapper-like form. According to the *British Medical Journal* this organism is permanent and specific in its form, and physiologically is distinguished by its total want of virulence in all but very large doses. It also possesses only the feeblest immunising power, and neither this nor the original virulence of the anthrax bacillus can be restored to it by the usual procedures.

THE POROSITY OF GLASS.—Glass would, according to *Invention*, appear to be more porous than has hitherto been supposed. In some recent experiments a vessel was partitioned into two parts by a sheet of glass, and on one side the vessel was filled with sodium amalgam and on the other with pure mercury. The whole was heated to a temperature of 200deg., where glass begins to be very fully conductive. The two sides were then connected with the positive and negative wires of a battery and a current of electricity passed through for about 30 hours, at the end of which time it was found that a considerable quantity of sodium had found its way through the glass into the mercury on the other side. It is stated that neither the original weight of the glass nor its transparency was in any degree affected.

ARTIFICIAL RUBBER.—According to *Invention*, a substitute for india-rubber has lately been discovered by E. Desprez, of Paris. Gutta-percha, in the form of sheet, is taken and covered on one or both sides with a close-meshed fabric—even wire gauze will serve for some purposes—and the whole is glusomerated by pressure under heat. Sawdust, zinc dust, and other suitable and cheap materials may, it is understood, be incorporated with the gutta-percha.

RAPID METHOD FOR MAKING PARTIAL GOLD PLATES.—Dr. Sidney S. Stowell, in the *Dental Register*, narrates his rapid method of making partial gold plates. He takes an impression in plaster or any of the modelling compounds, into

which he pours Mellotte's Metal (as cool as it will flow). The male die is then blackened by burning a match underneath it to prevent the counter die from sticking to it. The edges of the die are next built up to form a cup, into which Mellotte's metal is poured to form a counter die. Two or three thin plates, gold No. 32 gauge, are swaged separately, and then placed together and swaged again, after which the thin plates are soldered together. In this manner any thickness of plate required can be made, and it is claimed that better adaptation to the mouth can be made.

MOUNTING DISCS AND POINTS.—A method of mounting discs and points with phosphate cement is given by Dr. T. F. Chupein, in the *Dental Office and Laboratory*. The "osteo" is mixed to a creamy consistency, a small quantity dropped in the hole of the disc or point to be mounted, a little being also placed on the end of the mandrel. The mandrel point is next placed in the hole of the disc, and made true by putting the shank of the mandrel through the "disc setter." The cement is then allowed to get perfectly hard.

AN OLD ADVERTISEMENT.—A rather curious advertisement which appeared in the *Times* of January 1, 1795, is given in a recent issue of the *Strand Magazine*. It runs as follows:—

Change of Residence.—Mr. Dechemant, surgeon and dentist, royal patentee and inventor of the new mineral paste teeth, which are incorruptible, without smell, and approved of by the Society of Medicine, as well as by the Academy of Science of Paris; informs the public that he has taken, for the convenience of his profession a large house, No. 1, Frith Street, Soho, where there is a double staircase and apartments conveniently arranged for those who desire to be seen. Mr. Dechemant may be consulted at home from 11 till 3 o'clock. He will give gratis a dissertation on the advantages of his new teeth in which are inserted the different approbations that his discovery has merited from the learned of Europe. The number of people he receives at home does not permit him to visit out of doors. As some persons have hitherto imagined that Mr. Dechemant has no other profession than that of making mineral paste teeth he begs leave to inform the public that he not only practises all that concerns the art of a dentist, but likewise in all diseases of the mouth, and with the greatest advantage, having practised both medicine and surgery before he made his present discovery.

A CEMENT FILLING MATERIAL.—Dr. Seikel, of San Francisco, as stated in the *British Journal of Dental Science*, makes a cement as follows:—Chemically pure zinc is made with a portion of oxide of zinc and oxydised by keeping it at a white heat for from six to ten hours. Then add phosphate of aluminium until the mixture is of the consistence of putty. Bake until it is fully fused and looks like porcelain; then pulverise finely. This powder is to be used with a fluid composed of aluminium added to chemically pure glacial phosphoric acid and boiled down to the consistency of syrup.

THE GLASGOW DENTAL STUDENTS' SOCIETY.—The last meeting of the Session was held on Wednesday, May 1, when the President, Dr. McMillan, gave a very interesting paper on "Diseases of the Mouth." Before the paper was given, a letter from Messrs. Ash and Sons was read, in which they presented a number of volumes to the Students' Library, for which a hearty vote of thanks was given.

THE HOLLAND DENTAL ASSOCIATION.—A two days' meeting of this Association has been arranged for the 28th and 29th inst. Dr. Herbst is expected to attend, and he will demonstrate some of the methods with which his name is connected. Dr. Brandt will show obturators and prosthetic apparatus for the mouth and nose, whilst among the other subjects to be dealt with is that of the School Children's Teeth, upon which one of the members is to read a paper. The meeting will be held at the Amsterdam University.

ROYAL COLLEGE OF SURGEONS IN IRELAND DENTAL EXAMINATION.—Thomas St. Johnston (Birmingham), having passed the necessary examination, has been admitted a Licentiate in Dental Surgery of the College. The next examination is fixed to take place in November.

MR. S. J. HUTCHINSON has been elected a Member of the Council of the Metropolitan Counties Branch of the British Medical Association.

CORRESPONDENCE.

"Collins' Relief Fund."

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—Referring to my circular letter inviting assistance in the raising of a small fund on behalf of Mr. Daniel R. Collins, whose state of health precluded him from following his occupation, I have to inform you that shortly after the response thereto Mr. Collins died, and the amount collected has been applied to the payment of the funeral expenses, and for the benefit of the wife and child.

The matter is closed, and I have the pleasure to annex a statement of the receipts and payments, which Mr. F. H. Kingham, F.C.A., of 67, Cornhill, E.C., has kindly prepared.

The widow wishes me to return the donors her grateful thanks for their kind assistance.

70, Wimpole Street, London, W.
May, 1895.

Yours faithfully,
W. J. FISK.

LIST OF DONORS.

	£	s.	d.		£	s.	d.
Mr. John Ackery ...	1	1	0	Mr. C. Robins ...	0	10	0
Mr. W. R. Ackland (Clifton) ...	0	5	0	Mr. S. L. Rymer (Croydon) ...	1	0	0
Messrs. C. Ash & Sons ...	1	1	0	Mr. Norman Washbourn (Ripon) ...	1	1	0
Mr. Edward Bartlett ...	2	2	0	Mr. Charles W. West ...	1	1	0
Mr. H. Blackmore ...	0	2	6	Messrs. B. & C. Williams (Croydon) ...	1	1	0
Mr. J. Clifford ...	0	10	0	Mr. A. E. Clayton Woodhouse ...	1	1	0
Messrs. Dewest & Rushton ...	1	1	0	Mr. A. J. Woodhouse ...	1	1	0
Mr. W. J. Fisk ...	1	12	0	Mr. Robert H. Woodhouse ...	1	1	0
Mr. Walter Harrison (Brighton) ...	0	10	6				
Mr. Geo. Henry (Hastings) ...	0	10	6				
Messrs. S. & B. Longhurst ...	1	0	0				
Mt. J. H. Mummery ...	1	1	0				
Mr. Geo. Pedley (Sutton) ...	2	2	0				
					£20	14	6

STATEMENT OF RECEIPTS AND PAYMENTS.

Receipts.	£	s.	d.	Payments.	£	s.	d.
To Donations ...	20	14	6	By D. R. Collins for Post-ages and Expenses ...	1	1	8
				„ Printing, &c. ...	1	1	6
				„ Titford & Co., Undertakers—Funeral Expenses ...	6	6	2
				„ Post Office Savings Bank—Deposit for Benefit of Child ...	5	5	0
				„ Mrs. Collins—paid to her ...	7	0	2
	£20	14	6		£20	14	6

BOOKS RECEIVED.

DENTAL MICROSCOPY, by A. Hopewell Smith, with 8 lithograph plates from the author's original drawings. *London*: The Dental Manufacturing Company Limited, 6 to 10, Lexington Street; *Philadelphia*: The S. S. White Dental Manufacturing Company. 1885, pp. 110 with index. Price 6s.

The Dublin Journal of Medical Science, L'Odontologie et la Revue Internationale d'Odontologie, Transactions of the Odontological Society of Great Britain, The British Journal of Dental Science, The Dental Journal of the University of Michigan, The International Dental Journal, The Dental Cosmos, The Birmingham Medical Review, Guy's Hospital Gazette, Ohio Dental Journal, Annual Report for 1894 of the Wolverhampton Orphan Asylum, Revue Internationale de Médecine et de Chirurgie Pratiques, The Pharmaceutical Journal, The Chemist and Druggist, The Dental Hospital of London, 37th report, The Medical Press and Circular, The Medical Review, Items of Interest, The Yorkshire Post, Correspondenzblatt für Zahnärzte, Verteljahrsschrift für Zahnheilkunde.

Letters and other Communications received from:—

L. Brown; W. J. Fisk; W. Newell; The Registrar Royal College of Surgeons in Ireland; W. A. Maggs; T. A. Goard; Hubert W. Hardy; F. V. Richardson; W. A. Rhodes; A. E. Donagan; I. Renshaw; W. Wallace; John Butterworth.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 7.

JULY 15, 1895.

VOL. XVI.

The Recent Prosecutions.

THIS is an age of records, and the British Dental Association is not, at least in this respect, behind the age. In the recent prosecutions under the Dentists Act at Grimsby a record was created, because for the first time in the history of the Association there were pleas of guilty. This event marks an important epoch in the administration of the Dentists and similar Acts. It means that quacks are finding it useless to kick against the pricks, and when brought to book are prepared to throw up the sponge. No doubt they hope by this means to escape the damaging publicity that would otherwise be their lot. In this respect they are not likely to be fortunate, and it cannot be to their advantage for the public to know that unregistered practitioners are unable to claim in a court of law fees for any services they may have rendered. At the same time it is evident that though the public generally are beginning to appre-

ciate the benefits of the Act, the view that a bench of magistrates will take may depend chiefly on its composition. A worthy chairman may be a chemist. In that case he is likely to view an offence under the Dentists Act in a very lenient light, while he will send a sailor boy off to prison for a month or impose a fine of 21s. for not joining his smack. Here then is an important work for the British Dental Association. By its general and branch meetings in different towns in the kingdom it can gradually educate, if it has the wisdom of the serpent, in never so little a degree, the intelligence of the provincial magistracy to a sense of the importance of the provisions of the Act of 1878.

There is also another aspect of these cases to which it is our duty to direct attention, and that is to the fact that qualified medical practitioners administer anæsthetics for these unregistered men. For a medical man to administer anæsthetics for another man who is qualified and advertises, would certainly not accord with the generally received code of professional etiquette. For him to do so for one who advertises, and who is unqualified, is surely worse; and yet not only in Grimsby, but in Lancaster, and indeed all over the country and in London, we know of cases where anæsthetists make it a regular practice to work in conjunction with unqualified and unregistered dentists. Such men are amongst the foremost to advocate a more stringent penal clause in the Medical Acts, and yet they deliberately and flagrantly assist and connive at the infraction of such penal legislation by assisting offenders in their operations. To go so far is bad enough, but some men go further. Of course the immaculate medical man does not advertise, but he gives with all his qualifications and his address in full, the unregistered and unqualified dentist a certificate of his skill and efficiency as an operator.

The testimonial is duly printed and published in the advertising pamphlet of the pseudo dentist, which also states that an experienced and qualified medical man gives gas or chloroform, &c. No name is stated. But as the individual who gives the testimonial may live within a stone's throw of his dentist friend, the connection and inference is fairly obvious. This is one of the little sidelights of the Grimsby cases.

There is also another matter of interest. In a pamphlet issued by one of the defendants appears a testimonial from a qualified dentist. It is obvious that it was given simply and solely as a testimonial of a man's ability as a mechanical assistant and to be used for that purpose alone. The man coolly uses it in the way we have pointed out. Dentists will, therefore, do well to take care to whom they give and in what words they frame such testimonials.

The dread of publicity which is indicated by the plea of guilty in these recent cases, is emphasised by the pleadings of the defendants that they had not received notice of the prosecutions from the Association.

This lenient course has hitherto been followed by the Association greatly to their own disadvantage, and has given the offenders every opportunity of putting their houses in order. It was adopted so that ignorance of the law might not be pleaded as an excuse for its infringement. Now, however, that the Dental Act has been in force for over sixteen years, and an unbroken series of successful prosecutions are on record, we think that our executive may well be excused the polite and even generous preliminaries which have hitherto ushered in their prosecutions. "*Après vous, Messieurs,*" is not appreciated by the opponents of the Dentists Act.

It is a great satisfaction to know that in some localities the medical practitioners have readily listened to the representations made to them by members of our branches

and have resolved not to act in co-operation with un-registered men who act as dentists. This has, in some instances, been affirmed by resolution at branch meetings of the British Medical Association, and has also been strongly asserted in the columns of the *British Medical Journal*, but, unfortunately, all qualified medical men are not under the wholesome influence of the British Medical Association, and so the laxity of some medical men passes its baneful influences on to the dentists who are struggling to clear themselves and the public from the blot of charlatanism.

ASSOCIATION INTELLIGENCE.

The Annual General Meeting.

The Annual General Meeting of the British Dental Association will be held in the University of Edinburgh Buildings on August 29, 30 and 31.

Retiring President :

C. S. Tomes, F.R.S., M.A.Oxon., M.R.C.S., L.D.S.Eng.

President-elect :

W. Bowman MacLeod, L.D.S.Edin., F.R.S.E.

President of the Representative Board :

S. J. Hutchinson, M.R.C.S., L.D.S.Eng.

Vice-President of the Representative Board :

W. H. Breward Neale, L.D.S.I.

Treasurer : E. G. Betts, M.R.C.S., L.D.S.Eng., L.S.A.

Hon. Secretary : W. B. Paterson, F.R.C.S., L.D.S.Eng.

PROGRAMME OF BUSINESS PROCEEDINGS.

The section of the University buildings set apart for the use of the members of the British Dental Association will be open for their reception on Wednesday, August 28. The various exhibits of the leading firms of dental manufacturers and instrument makers will then be ready for inspection.

Wednesday, August 28.

A Meeting of the Business Committee may possibly be held in the Waterloo Hotel during the evening.

Thursday, August 29.

9.30 a.m.—Meeting of the Representative Board in the Court Room of the University.

Business :—Annual Meeting matters, election of members, &c.

10.30 a.m.—Annual General Meeting in the Celtic and History Lecture Hall. VALEDICTORY ADDRESS of the retiring President. Installation of the new President. The PRESIDENT'S ADDRESS. Votes of thanks. The Treasurer's Report. The Hon. Secretary's Report. Report of the Representative Board as to time, place and President of Annual General Meeting in 1896.

Motion :—

Resolution from Scottish Branch *re* alteration of Bye-law 15, viz. :—

That the words "and the President and Hon. Secretary for the time being of each Branch of the Association" be deleted from the Bye-law, and the following words substituted: "and two Members from each Branch of the Association, who shall be elected at the Annual Meeting of the Branch they represent, and shall serve on the Board for the ensuing year, and shall be eligible for annual re-election."

J. GRAHAM MUNRO, Hon. Sec. Scottish Branch.

An Address by J. H. Mummery, M.R.C.S., L.D.S.Eng., President of the Microscopical Section.

Adjournment.

2 p.m.—Adjourned business, if any. Reading and discussion of Papers in General Meeting Room.

4.15.—Adjournment.

Friday, August 30.

9.30 a.m.—Meeting of the subscribers and friends of the Dental Benevolent Fund in the Court Room of the University. Report of the Hon. Secretary of the Fund.

10.30 a.m.—Demonstrations at the Dental Hospital.

2 p.m.—Reading and Discussion of Papers in General Meeting Room.

4.30 p.m.—Adjournment.

Saturday, August 31.

2.30 p.m.—The concluding meeting of the Association for the transaction of formal business will be held at Tarbet, Loch Lomond, weather permitting, in the open air.

PAPERS.

The following Papers and Demonstrations have been promised :—

"An Inquiry into the Safety and Sphere of Applicability of Chloroform as an Anæsthetic in Dental Surgery," by FREDK. HEWITT, M.D., London.

"Oral Hygiene," by W. HERN, M.R.C.S., L.D.S.Eng., London.

"What the Dentist can do for the State," by G. CUNNINGHAM, M.A.Cantab., L.D.S.Eng., D.M.D.Harv., Cambridge.

"Amalgams in Every Day Practice," by C. ROBBINS, L.D.S.Eng., London.

"Pulpol, a new medicated Cement," by J. WESSLER, Director of the Stockholm Dental Clinic.

SHORT PAPERS IN THE NATURE OF CASUAL COMMUNICATIONS OR LECTURE DEMONSTRATIONS.

A communication, to be followed by a demonstration, from R. P. LENNOX, Cambridge.

"On a Method of Obtaining a Plaster Model, as Good as the Mouth, with a View to Crowning one or more of the Anterior Teeth."

A communication followed by Demonstration on "Plaster Impression-taking in the Extended Position" (special trays), by G. BRUNTON, Leeds.

A communication and demonstration on "Springs," by S. A. T. COXON, L.D.S.I., Wisbech.

A lecture demonstration on "Electricity in Dentistry," by H. B. EZARD, L.D.S.Edin., Edinburgh, and W. BRYSON, M.I.E.E., F.C.S.

A lecture demonstration (with lantern), by W. DALL, L.D.S.Glas., Glasgow, on "Inlays, Ancient and Modern, Gum-coloured Inlays for Roots, and the RepARATION of Fractured Teeth by Porcelain."

DEMONSTRATIONS.

"Further Developments in Continuous Gum Work," by H. ROSE, L.D.S.Eng., London.

"Seamless Crowns (method of making)," by I. RENSHAW, L.D.S.I., Rochdale.

"Richmond Crowns (simple method of making)," by VERNON KNOWLES, L.D.S.Eng., Reading.

"The Administration of Chloroform for Dental Cases at the Dental Hospital in Edinburgh," by

Exhibition of specimens of mechanical work done by pupils at the Institute of Dental Technology, London, by the Principal.

"Crystal Mat Gold," by H. B. EZARD, L.D.S.Edin., Edinburgh.

"Gold filling with electric Mallet, also mounting a Logan Crown," by LESLIE FRAZER, L.D.S.Edin., Inverness.

"Root filling with Oxychloride of Zinc," by J. STIRLING, L.D.S.Eng., Ayr.

"Mode of Flasking with Brasses," by A. WILSON, L.D.S.Edin., Edinburgh.

"Continuous Gum, and Furnace," by J. H. GARTRELL, Penzance.

"Glass Inlays," by W. H. WILLIAMSON, M.D. and M.C.Aber., L.D.S.Edin., D.D.S.Phil., Aberdeen.

Exhibition of a "Cleft Palate Case," by J. A. BIGGS, L.D.S.Glas., Glasgow.

"Porcelain Inlay Cutting," by W. DALL, L.D.S.Glas., Glasgow.

The Local Hon. Secretary for Demonstration Arrangements is H. B. EZARD, L.D.S.Edin., 23, Buccleuch Place, Edinburgh.

THE MICROSCOPICAL SECTION.

President: J. H. MUMMERY, M.R.C.S., L.D.S.Eng., London.

Hon. Secretary: A. HOPEWELL SMITH, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng., Boston.

Local Hon. Secretary: G. W. WATSON, L.D.S.Edin., 3, Walker Street, Edinburgh.

The meetings of the section will be held in the Public Law Class Room of the University, commencing on the afternoon of Thursday, August 29. A varying exhibition of interesting dental microscopic specimens will be open to the inspection of members and visitors on the Thursday and Friday, in the Natural History Laboratory.

Opening address by the President.

Microscopical exhibits contributed by: Messrs. J. J. ANDREW, F. J. BENNETT, STORER BENNETT, DENAR WHITTLES, T. ROWNEY, ANDREW WILSON, J. W. WATSON, C. S. TOMES, J. H. MUMMERY, the Hon. Sec., and others.

Papers illustrated by the oxy-hydrogen lantern:—

"Two unusual Cases of Geminations," "A Radicular Odontome," by J. F. COLYER, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.

"Dental Pathology and Physiology," by G. W. WATSON, L.D.S.Edin.

"Some Dental Lesions induced by Caries," by the Hon. Sec.

DISCUSSION.—"Pathology of the Dental Pulp."

DEMONSTRATIONS.

The PRESIDENT on "The Use of the Schanze Microtome." Prof. HUNTER, M.D., C.M., F.R.C.S., F.R.C.P.Edin., on "A Simple Method of Photo-micrography."

Dr. G. MANN, M.B., C.M.Edin., on a subject not yet announced.

Microscope slides lent by Dr. Grevers (Amsterdam), and Dr. Zigisimondi (Vienna). The latter gentleman's slides will be on exhibition throughout the meeting.

PROGRAMME OF SOCIAL PROCEEDINGS.

Wednesday, August 28 (the evening preceding the meeting).

8.30 p.m.—The members of the Scottish Branch will receive the members of the British Dental Association at the Waterloo Hotel. [Informal Gathering.]

9 p.m.—Concert. Highland dancing, smoking, &c., in the Victoria Hall of the Hotel.

Thursday, August 29.

4.30 p.m.—The Scottish Branch invite the members of the British Dental Association and ladies accompanying them, to an excursion to view the Forth Bridge.

(Start from Waverley Station 4.30 p.m. Members who accept are requested to apply for tickets at the Secretaries' office in the University buildings before 11 a.m. on the Thursday.)

8.30 p.m.—OFFICIAL RECEPTION BY THE LORD PROVOST AND MAGISTRATES OF EDINBURGH AT THE CITY CHAMBERS. Music, &c.

Friday, August 30.

4.50 p.m.—Short excursions to Arthur's Seat, Edinburgh Castle, Holyrood Palace, &c. (notices of details will be posted).

7.30.—The Annual Dinner, Grand Hall, Waterloo Hotel; (tickets one guinea, including wine, will be obtainable in the Secretaries' office).

Mrs. Bowman MacLeod will hold a Reception from 8 to 10 p.m. on this evening, in the Victoria Hall, Waterloo Hotel, for ladies attending the meeting; music, &c.

Saturday, August 31.

9 a.m.—Excursion to Loch Lomond, and luncheon at Tarbet at the invitation of the Scottish Branch.

The special train will start from the Waverley Station 9.15 a.m., and return there at 8.15 p.m.

N.B.—Each member will be entitled to one extra ticket. Acceptances must be notified at the Secretaries' office before 11 a.m. Friday. Should a member desire additional tickets, he may obtain them at a charge of 7s. 6d. each.

The President-elect and J. Graham Munro, L.D.S.Edin., 16, George Square, Edinburgh, have charge of the local arrangements in connection with the entertainments.

The arrangements for the entertainment of the ladies attending the meeting are in the hands of Mrs. Bowman MacLeod, assisted by Mesdames Macgregor, Wilson, Watson, Durward, Munro, and Miss MacLeod.

The final arrangements as to times and order of business proceedings, and fuller details as to the meeting, will be found upon the official programme to be issued in August. Members desirous of exhibiting specimens or making suggestions are requested to communicate with

W. B. PATERSON, *Hon. Sec.*

Midland Counties Branch.

THE fifteenth annual meeting of the Midland Branch of the British Dental Association was held in Hull on Thursday, Friday and Saturday, June 20, 21 and 22. On Thursday evening the Council met at the Station Hotel for the transaction of business under the presidency of Mr. Rogers. A smoking concert was given in another room, Mr. J. G. Wallis (Hull) presiding, and the visitors were received by the other members of the local Committee, Messrs. Audas, Armitage, Charter, Rice and Blyth. The Chairman, in welcoming the members, said that he trusted their visit to Hull would afford pleasure to them, and also be of advantage to them professionally. He spoke of the pleasure it afforded the members of the Hull profession to receive those connected with the Midland Branch, and everything in their power would be done to make the proceedings as enjoyable as possible. The concert was sustained by Mr. Frank Hall, Mr. J. L. Charter, and others, to the accompaniment of Mr. F. W. Brook. Mr. Milner also gave banjo selections. A cordial vote of thanks to the chairman terminated the proceedings.

On Friday morning the members assembled at the Hull Royal Infirmary by the kind permission of the Board of Management. The following demonstrations were carried out. Clinics: Extraction under $N_2O + Air$ according to Mr. Carter Braine's Method, Mr. W. T. Madin, L.D.S. (Birmingham); Demonstration in Continuous Gum Work, Mr. Harry Rose, L.D.S. (London); (a) "Sponge Grafting in cases of Absorbed or Undeveloped Roots," (b) "Gold Filling—using a Matrix," (c) "A New Method of Flasking Rubber Dentures," Mr. Geo. Brunton (Leeds); "Tinting Teeth for Special Cases," Mr. G. Cunningham, M.A., L.D.S., D.M.D. Havard (Cambridge); "Pivot," Mr. H. P. Fernald, L.D.S., D.D.S. Boston (Cheltenham); "Gold Filling," Mr. W. E. Harding, L.D.S. (Shrewsbury); "Immediate Root Filling by Sulphuric Acid Method," Mr. Frank Harrison, M.R.C.S., L.D.S. (Sheffield); "The Use of Soft Amalgam as a Protector for Temporary Dressings," Mr. T. E. King, L.D.S. (York); "Taking an Impression for, and Making a Gold Crown," "Making Tapering Screw-posts by means of a Pair of Pliers," Mr. R. P. Lennox (Cambridge); "Newland-Pedley Crown," Mr. H. Wallis, L.D.S. (Hull).

The business meeting was held in the Board room of the Royal Infirmary, the President, Mr. Rogers, in the chair. The other members present were: Messrs. J. C. Storey (President-elect), G. G. Campion (Hon. Treasurer), I. Renshaw (Hon. Secretary), T. W. T. Rowney (Derby); T. E. Constant (Scarborough); Henry Blandy (Nottingham); James Taylor (Roundhay); James Main Nicol (Leeds); G. H. Lodge (Rotherham); W. H. Waite (Liverpool); Frank Harrison (Sheffield); Herbert G. Ashby (Scarborough); J. H.

Rice (Hull); F. A. Armitage (Hull); Herbert Wallis (Hull); Alonzo Lodge (Huddersfield); William Taylor (Batley); W. E. Harding (Shrewsbury); Thomas Gaddes (Harrogate); J. G. Wallis (Hull); J. Charters Birch (Leeds); J. H. Bottomley (Bradford); George Brunton (Leeds); G. W. Wood (Retford); R. C. Heaton-Drabble (Sheffield); W. A. G. Sutcliffe (Bradford); J. A. Fothergill (Darlington); J. W. Dent (Stockton); Charles Ripon (Dewsbury); Alfred Cocker (Sowerby Bridge); T. E. King (York); G. G. Cunningham (Cambridge); R. P. Lennox (Cambridge); W. A. Rhodes (Cambridge); Alex. Kirby (Bedford); Harry Rose (London); and W. T. Madin (Birmingham).

The HON. SECRETARY read a letter of regret for inability to be present from the late Treasurer, Mr. Sidney Wormald. Mr. Chas. Tomes also wrote regretting his enforced absence.

The Hon. Secretary then read the annual report of the branch as follows :—

GENTLEMEN,—In presenting the Report of the year's work in connection with the Midland Branch of the British Dental Association, we have again to state that its operations show a degree of vitality and usefulness of a satisfactory character.

The last annual meeting was held at the College of Medicine, Newcastle-on-Tyne, on March 28.

In the absence, through illness, of the President, Mr. R. Rogers, one of the Vice-presidents, Mr. W. E. Harding, presided over the meeting.

In consequence of the annual meeting of the Association being held in the same building, simultaneously with that of the Midland Branch, it was decided to dispense with papers and demonstrations, in order that the operations of the annual meeting of the former should be the better assured; therefore the business of the branch was strictly confined to the usual routine business, viz., reading and adopting minutes, receiving and adopting the hon. secretary's and hon. treasurer's reports, and the election of officers and councillors.

Mr. R. Rogers was re-elected president; Mr. J. C. Story was elected president-elect, Mr. G. G. Campion was re-elected hon. treasurer, and Mr. I. Renshaw was re-elected hon. secretary. The retiring members of the Council were Messrs. H. Blandy, M. Johnson, and Hy. Campion.

Before the ballot was taken for the election of members to fill the vacancies on the Council, Mr. G. G. Campion stated that his father, Mr. Hy. Campion, wished it to be understood that he did not seek re-election, when it was resolved :—"That in consideration of the long and valuable services rendered to the Midland Branch, as its first president (in 1880), and continuously since as a member of the Council, Mr. Henry Campion be elected an honorary vice-president of the branch."

The election was then proceeded with, when Messrs. Hy. Blandy, M. Johnson and A. A. Matthews were elected.

There have been two informal meetings held during the year, the autumnal one being held in Manchester, in October, when Mr. T. E. King (York) read a paper on "The British Dental Association and its Branches." The spring meeting was held at Bradford in February last, when papers were read by Mr. T. Gaddes (Harrogate), and Mr. Frederick Rose (Liverpool), on "The Ethical Status of the Dental Profession." Both meetings were very numerous attended, and the greatest interest was manifested in the proceedings.

Numerical Strength.—We have at present 169 members on the books. We have lost three members by death since the last annual meeting, viz. :—Mr. Joseph Harrison (Sheffield) a former president of the branch ; Mr. E. H. Williams (Manchester), a former member of the Council ; and Mr. Eveline Mahonie (Sheffield). Two members have resigned owing to advancing years ; five names have been left off the roll, according to rule, the members being two years in arrears with their subscriptions to the Association—their connection with the branch lapsing in consequence ; whilst seven have been left off the branch register for the same cause, and a number of names have been removed from the list which ought to have been removed at an earlier period, but which had been retained. During the year thirteen new members have been elected, and this number was added to at the Council meeting last evening, by the election of eight new members. Eleven gentlemen were elected members of the Association.

The Council recommend Sheffield as the place where the next annual meeting shall be held, and also recommend for your adoption as president-elect, Mr. Frank Harrison, M.R.C.S., L.D.S. (Sheffield).

The retiring Councillors to-day are Messrs. W. H. Waite, J. C. Storey, and H. C. Quinby.

Mr. T. E. King retires from the Representative Board at the annual meeting of the Association, but does not desire to be re-elected.

The Branch has contributed £9 18s. at its gatherings during the year to the Dental Benevolent Fund.

It is gratifying to know that the interest in, and popularity of, the operations of the Branch is well maintained, as is evidenced by the attendance at its meetings.

Mr. BLANDY said Mr. King had been a representative on the Board for many years, and he thought it would be wrong if they let him go without some expression of thanks for his valuable services.

The CHAIRMAN said they had endeavoured to get Mr. King to alter his determination but without effect. He endorsed all that had been said by Mr. Blandy, and should be pleased to second a vote of thanks to him for services rendered.

Mr. BLANDY said Mr. King thought each Branch ought to send its own representative, and under these conditions he should be prepared to serve.

Mr. WAITE said he sympathised with Mr. King's feelings with regard to the manner of representation on the Central Board.

Mr. GADDES said that to make any alteration in this direction would necessitate an amendment of the bye-laws of the Association, and the matter would have to come before the Annual General Meeting of the Association. Meanwhile they would have to nominate representatives.

Mr. STOREY suggested that they should amend the report, mentioning the names of Mr. King and Mr. Harrison, in the event of the former withdrawing his determination not to stand.

The report was adopted on the motion of Mr. HARDING, seconded by Mr. GADDES.

The HON. TREASURER, in presenting his report, said that during the year twelve members had been removed for non-payment, five having failed to pay their subscription, and by defaulters in the payment of branch subscriptions, the balance sheet was as follows :— Balance at the end of December, 1893 £66 19s. 8d., subscriptions 1894, £48 14s. ; bond interest 14s. 7d., total £116 8s. 3d. ; expenditure, printing, stationery, &c., £7 14s. 6d. ; hire of rooms, 15s. ; amount towards hon. secretary's expenses, £10 ; hon. secretary's postage and telegrams, £1 17s. 6d. ; treasurer's postage and telegrams, £1 6s. ; bond commission, 5s. 2d. ; cash in hand, 14s. ; balance at the bank on December 3, £93 16s. 7d., which he believed was the largest balance the branch had ever had at the end of a financial year, showing an increase of £25 over that of the previous year. Only three members had not paid their subscriptions for last year.

Mr. BRUNTON moved the adoption of the balance sheet.

Mr. HARRISON, in seconding the proposition, spoke of the financial improvement effected through the ability of Mr. Campion.

The motion was adopted.

The CHAIRMAN moved the re-election of Mr. I. Renshaw as hon. secretary, Mr. Geo. G. Campion as hon. treasurer, and the appointment of Mr. Frank Harrison, of Sheffield, as President-elect.

Mr. HARDING seconded the motion and it was agreed to.

It was resolved that the next Annual Meeting be held at Sheffield in June next.

On the motion of Mr. J. C. STOREY, seconded by Mr. FOTHERGILL, it was decided to hold the informal meeting at Preston in the month of October.

Mr. C. J. STOREY moved that the retiring members of the Council be not eligible for re-election until one year from the date of retirement, the resolution to take effect at the expiration of the term of the present elected officers.

Mr. CAMPION seconded.

Mr. CONSTANT moved as an amendment that the period of appointing the members of the Council be every year instead of three years as at present.

Mr. BLANDY seconded the amendment, which was withdrawn, and the original motion adopted by ten votes to eight against.

Messrs Waite, King and Gaddes were elected members of the Council. Messrs. Constant, King and Gaddes received the same number of votes on the first ballot and a second ballot was taken.

Mr. RICHARD ROGERS then delivered his valedictory address. He said:—GENTLEMEN,—My first duty is to thank the members of the Midland Branch of the British Dental Association for having elected me to the post of President for the past two years, which post I fear I have inadequately filled owing to a very severe attack of typhoid fever, which has prevented me from attending any of the meetings up to now. I therefore take this opportunity of thanking Mr. Harding (one of your late presidents) and other friends for having undertaken these duties for me, and on many occasions at very short notice. I assure you that nothing except the very peremptory orders of my medical man would have prevented me from being present, at any rate at some of the meetings.

It has been a very great honour to me to be allowed to preside over so important a branch of our great Association, composed as it is of men who have devoted their lives to the cause of science and the relief of suffering. I offer my congratulations to the members of the Association on its continued progress. We have increased in numbers and are undoubtedly exerting a very great influence over our profession, tending to raise not only the standard of education and efficiency but the *locus standi* of the profession as a whole in the estimation of the medical and scientific worlds and also in the eyes of the world generally.

In this month's Dental Journal we see that another important case in the law courts has been decided in our favour; the jury, without any instructions from the judge, acknowledging the fact that a dentist is worthy of his fee, however long or short a time the operation may take, the fee being simply for the operative skill and professional knowledge displayed.

It was in this branch that I first began my dental political career, now some twenty years gone by, and on that account alone, if not on any other, I shall at all times in the future have most kindly feelings and recollections for this one particular branch of the Association.

In vacating this chair I must again express my sense of the honour you have conferred upon me, the remembrance of which will be one of the happiest recollections that I shall carry with me into private life. In retiring from the Dental political world I do so with a warm feeling of gratitude to the Association—its members, many of whom I number among my dearest friends, and its officers, for the confidence they have reposed in me, and for the support which I have always received from them to aid me in carrying out the duties of my post. Especially do I wish to thank Mr. Renshaw (our able and energetic

Secretary) for the especial aid he has rendered me in getting up our meetings.

I must now introduce to you my successor, who will be your President for the ensuing year. In our branch of our now large Association there is no one more worthy and more fitted to occupy the presidential chair. I am sure that in Mr. Storey the interests of this branch will be advanced, and that he will occupy the chair with dignity and efficiency, for it is to gentlemen such as he that we must look for the upholding of the status of our profession.

Gentlemen, let me ask you to get every dentist (I use the word advisedly) to join the Association, for is not unity strength. The hour glass of time is sinking fast hour by hour for all of us, but the memory of the great of years gone by is a spur to further efforts and an example of a truer and higher life ; and, indeed, happy shall we be we can pass on to our successors the lamp of professional honour undimmed, and burning brightly as it was bequeathed to us by our predecessors.

Mr. J. C. STOREY then took the chair and said : Ladies and Gentlemen, I feel honoured by the position you have placed me in, and when I look back on the list of worthy presidents who have filled this chair, commencing with the father of Mr. Campion, than whom there is no more worthy man, and continuing to the time of Mr. Rogers, whom we so highly esteem after occupying the position two years, the honour is, I feel, the greater. I trust I shall be able during the year to fill this office to your entire satisfaction ; if I do not it will not be my fault, but my misfortune.

Mr. BLANDY moved a vote of thanks to Mr. Rogers, which was seconded by Mr. WAITE, supported by Mr. RENSHAW and the President, and heartily adopted.

Mr. ROGERS briefly returned thanks.

The company then adjourned to the Station Hotel, where the President (Mr. J. C. Storey) entertained a large party, including the Sheriff and Mrs. Crooke, to luncheon, at the conclusion of which the health of the Chairman was heartily drunk. Carriages were then provided, and the company proceeded to the Town Hall, in the council chamber of which the general meeting was held, Mr. J. C. Storey again presiding. The Mayor, Ald. Richardson, was present.

The PRESIDENT said : Ladies and Gentlemen, — In taking my position this afternoon as the President of the oldest, and I think the largest, branch of the British Dental Association, I would venture to confess to a feeling of what may be, I hope, considered pardonable pride. In these days, when confidence counts for something, it may be a comparatively easy matter to win a certain amount of popularity, and even success in the eyes of the public, in one's own profession. To-day I count it a greater joy to be placed by my own professional brethren in the highest place it is in their power to accord. On behalf of myself and the local Committee we thank

you for doing us the honour to come to this good old town of Hull. Alderman Symons, who is well known in this town, and is indeed the father of the Corporation, has kindly placed in my hands an extract from a speech which he recently gave to some visitors in this building, and I think they will be of no little interest to you. He says: "The royal borough of Hull is a very ancient, historical port. It may not be generally known that the formation of Hull was due to a little creature called a hare. Edward I. was visiting a place four miles from Hull called Cottingham; this happened in the year 1296, and during his stay he went out hare hunting. He started one, and it romped into the little hamlet called 'Wyke,' now known as Hull. The king evidently appeared stunned at the sight of the river Humber; whether it was through seeing the water of the Humber the colour of pea-soup the historian sayeth not. However, the king's great ardour for hunting forsook him. When he had taken a survey, he exclaimed: 'I will make this obscure corner of the earth a fortified town,' and he kept his word. Subsequently the king got possession of the land. He walled in the little village and called it 'Kingston-upon-Hull' to distinguish it from 'Kingston-on-Thames.' This occurred in the year 1298." I shall not weary you this afternoon by recounting the ups and downs of our ancient borough during the last 700 years, and lest I should interfere with the remarks of our worthy chief magistrate whom we are honoured to have with us, I will not go into the prodigious strides which have been made since then. I will content myself with offering you a hearty Yorkshire welcome, and hope that you may, under favourable circumstances, after tea to-day and before we go on our excursion to-morrow, have the opportunity of seeing the birth-place of the immortal Wilberforce, which is only some few hundred yards from this Town Hall and other places of interest to be found here. As it is usually the first duty after accepting the office of President, so it is, I think, the most difficult task to determine the subject of the presidential address. As years roll by, the ground being further covered increases this difficulty. It occurred to me that as we have at other times during the day, and at our informal meetings during the year, ample provision for considering technical subjects, we might devote a short time to a consideration of a subject which, while being not tedious to our members, will be understandable and I trust interesting and useful to our lady friends and visitors who are invited to this sederunt. It is not my purpose to-day to go into the ancient history of the dentist, but rather, recognising the fact that he is here, and has come to stay, we ask *why his necessity?* The history of nations tends to prove that wherever there has been a considerable advance in civilization, or shall I rather say where artificial life has obtained, there has been a marked deterioration of the teeth. We have evidence of this among the preserved skulls of the ancient Romans and Egyptians. To-day in European and American nations, when in our modes of living, more especially

in regard to our manner of cooking and eating food, there is perhaps the greatest departure from the modes and habits of primeval man, we find history repeating itself, and the dental armature of the inhabitants of these countries in a most deplorable state. These latter decades of the nineteenth century have been termed "the age of nerves." Even in Hull, which by some strange whim is considered much behind the times, you can within a stone's throw of this building go to the office of a gentleman who, as he reads his morning letters, chronicles his reply into the phonograph, or promptly communicates with his correspondent by the telephone which is hanging to his desk. Does not this seem like running at high pressure? No wonder so many suffer from nerve-strain! In this connection, it will be well within the memory of most present that two years ago our highly revered friend, Mr. James Smith Turner, gave this as a likely reason for the diversion of the phosphates from their tooth-preserving functions, showing that while so much of the phosphates had to go for brain-restoration, there was likely to be a deficiency for tooth structure. Be the reason whatever it may, the fact remains that on the verge of the twentieth century we have, more especially in European and English-speaking nations, the teeth in such a condition that without considerable outside assistance, they are unable to sustain the wear and tear of their daily requirements. Hence the *raison d'être* of the dentist. In this age of rapid advancement there has probably been no more "fitting for circumstances" than can be shown in the history of the dentist.

Although it is perfectly true that going back thirty or even fifty years we can find men who stood head and shoulders above their *confrères*, some, indeed, who were nearly half a century before their times, yet so far as knowledge of the pathology of the teeth was concerned and the means for their conservation there was little generally known. Since then our knowledge of diseases of the teeth and their treatment has been one steady course of progress; until now we seem to be in possession of the reason for our varied operations being successful. From an era of guesswork we have passed on to the stage of real knowledge, and dentistry can fairly claim to be ranked as a science. It may be useful to indicate the path of progress. We do not now propose to deal with the times of the barber-surgeon, when the mode of treatment was just the primitive one of extraction (and by the way, in this connection, I may say that the idea of "extraction being the only cure for an aching tooth" is so firmly ingrained in the habits of the people that it constitutes our greatest difficulty in suggesting conservative operations to-day), but I wish rather to look back to some forty years ago, when there began to arise what is termed the ethical spirit, and the fact came to be realised that isolation was not the surest means of progress. Almost simultaneously, on both sides of the Atlantic, dental societies were formed and there became possible

an interchange of ideas on methods and modes of practice. Time would fail me to tell, and probably interest would flag, were I to recite the various stages in this country by which in 1859 the Royal College of Surgeons in England was led to offer the inducement of L.D.S. (Licentiate in Dental Surgery) to men to take up a definite course of preparation for their speciality and to submit themselves to the test of examination at Lincoln's Inn Fields. It would again be tedious to recite how the advantage of this being seen by the public, there arose in after years the knowledge that in the public interest men should be called upon in *all* cases so to qualify themselves, and, as an inducement to this, should receive a certain amount of protection. Led on by our much honoured veteran, Sir John Tomes, and his doughty lieutenant, Mr. James Smith Turner, the pioneers of our movement succeeded in getting safely through Parliament in 1878 the "Dental Act" which, though many of us feel to be very capable of improvement, yet was a starting point from which ultimately will come, we hope, a race of men fitted in every way to fulfil the duties they essay to do. An important direct result of this Act has been the formation of the British Dental Association, by which men engaged in the same professional pursuits have come to know each other, and knowing, to have mutual confidence. Hence has arisen a reciprocation of ideas which has resulted in an accumulation of knowledge for the common benefit. Time was when each, thinking himself in possession of superior knowledge to that of his neighbour, held it as his own, but, as I said, the higher and ethical spirit arose—he recognised that his knowledge was God-given, that he held it in stewardship, and so meeting with his brethren he imparted it to them. This, of course, begat reciprocity, and he found that after all he could himself contribute less to the common stock than the sum of the information he received, so he realised that, apart from higher reasons, by the lower test of self-interest he had much to gain from association. The most important result of this is the scheme which has, shall I say, evolved, of the *present day training of a dentist* for his subsequent career. Let us see what this is. First: It is necessary that his *elementary education* should be proved. He must successfully pass an examination in general knowledge such as is the recognised standard required for the learned professions, and if, through favourable circumstances, he has been able to enter one of the universities and take his degree in Arts, so much the larger will the outlook of life be for him. Secondly: His *mechanical training*, which, in the opinion of many of us, ought to be at least three years progressed before he enters the next stage. The present mode of training is by apprenticeship to a qualified dentist; and, given a man as teacher who has the ability, the time, and the conscience at his disposal to do *all* his duty to the youth, this method is fairly good. When this cannot be done we think the now almost universal technical schools in our larger towns should be made use of,

where wood carving and the like may be profitably engaged in during the first year or two. The best plan in our opinion, however, is the scheme, now almost ripe, of our indefatigable confrère, Mr. George Cunningham, who has established an Institute of Dental Technology in London, where a scientific and practical scheme is being elaborated for the training of pupils and apprentices. Whichever is chosen, the mechanical training being so far advanced, at the end of three or four years the third stage is reached—*entrance at medical and dental hospitals*. In the former, side by side with the medical student, general knowledge of anatomy, physiology, pathology, and the like is gained, while in the Dental Hospital the active and direct training for the every day-work of the dentist is acquired. It will be interesting to go over the training and see how far this meets the requirements of our profession, and so, at the risk of repetition, we will assess the various stages. *First: The Preliminary Examination.* Now, it may be taken as an axiom in these days of education that, the wider the general knowledge imparted, the more easily grasped will be the greater truths presented at a later stage. And we think, that with an average standard of, say, the London Matriculation examination, we may consider that this is fairly provided for. *Second Stage—mechanical training:* If a boy is not naturally mechanical he is not fit to be a dentist. Taking it for granted that the boy is a born mechanic, we think it desirable, nevertheless, to give early opportunity for the cultivation of this faculty. At this stage his hand and eye are trained to work together, so that he may, in after years, be able himself not only to operate at the chair-side, but by his own hands prepare all the intricate and artistic appliances needed by his patients to supply the loss of their natural teeth. Hence it comes that day by day for three, and preferably for four years, he is constantly employed at the work-bench, acquiring that manual dexterity which will serve him well in every branch of his subsequent career. *Third Stage—general and dental hospital training.* While we, as dentists, deal with a very limited portion of the human frame, we must ever remember that we are dealing with a part of a very complex organism, and, with a view to a general knowledge of the system, it is, we think, wisely arranged that some parts of the two years of hospital practice should be spent at a general hospital, where, side by side with the future general medical practitioner, the future dentist receives his fundamental information and acquires his knowledge of the treatment of general ailments. While this is being done, however, it only occupies parts of each day, and in the Dental Hospital daily attendance is required for from two to three hours. Here the student is practically taught by precept and example, and under judicious and efficient supervision himself performing over and over again the very operations for the extraction or conservation of teeth, or the supplying of dentures, which will be matter of daily routine to him in his subsequent

career. Of course, at various stages examinations are held as tests of his work, and ultimately, if successful, his labours are crowned by receiving the coveted diploma of L.D.S. (Licentiate in Dental Surgery). In some cases further work is now undertaken, and not a few men have acquired the M.R.C.S. and L.R.C.P., and even the F.R.C.S., but these are accessories, and not necessities, however valuable they may be.

We propose next, having shown that a dentist is necessary, and that somewhat complex and efficient methods are taken to fit him for his work, to ask, *Is his work helpful to society in general?* The reply may, I think, be considered fairly satisfactory. Of course, where antecedent conditions have been unfavourable and dwarfed, or malformed jaws prevent the proper development of the teeth, or where the quality of the teeth themselves is so bad that no art or science can save them, the dentist is unable to do all he could wish. Even then he can often in the first instance, by judicious thinning and regulation of the teeth, and in the second, by great care, do much to ameliorate such unfortunate conditions; and ultimately when his last efforts have proved fruitless and the grinders must "cease because they are few," he can, with the aid of induced lethargic-sleep remove the offenders and supply those invaluable substitutes which led Oliver Wendell Holmes, when proposing the toast of the Dental Profession, to say, "It has established and prolonged the reign of beauty; it has added to the charm of social intercourse, and lent perfection to the accents of eloquence; it has taken from old age its most unwelcome feature, and lengthened enjoyable human life far beyond the limit of the years when the toothless and poor blind patriarch might well exclaim, 'I have no pleasure in them.'" In the majority of cases he can, however, by periodical examinations, commenced even in the tender years of childhood, and followed on through life, by recommendations and advice as to cleanliness, and, where there is need, by careful fillings, be of untold service to the individual. It is hardly going beyond bounds to say that, where the conditions of examinations and service are faithfully followed, the much-dreaded toothaches which Robert Burns described as "the hell o' a' disease," is quite an unnecessary thing. Much difficulty is found from the fact that, largely I believe inherited, there is an unwholesome dread of the dental surgery. But where, I ask, has there been more anxious desire than here to make use of the latest developments in science, both for the amelioration of pain and the facilitating of operations, until now, a properly equipped dentist's atelier, with its intricate chair of marvellous mechanism, its electric lights for inside and outside of the mouth, its dental motor and engine, for performing the infinitely fine and delicate operations on the teeth, and the hundred and one other appliances, is proof positive that all needless sufferings will be avoided. Nor does his desire to fully qualify and equip himself end here, but in daily practice

not a few are making observations, and what is better recording them, and then, either by clinic, or paper, presenting the results at such meetings as that we are holding to-day. Thus, there goes on a continuous advancement in modes and manners of practice. The result of this has been of course reflex, and now that in the dental profession the true spirit of ethics obtains, the public are responding in confidences, and as in other parts of the healing art, dentists are trusted and believed to be giving their best services, though for the moment it may be against their own pecuniary advantage. In public affairs they are already pointing out to the official life what immense advantages are to be obtained by the early care of children's teeth, and in some workhouses, as the result of this, dental appointments have been made to the permanent paid staff. Our Naval and Military authorities, too, have been aroused, and are now conducting, in conjunction with one of our London dental hospitals, experimental schemes in reference to tooth-filling for recruits. While there has been this general awakening it was hardly to be expected that the race of impostors would be dormant. When the Dental Act became law in 1878, *all existing* interests were most carefully guarded, and any man who actually carried on dentistry, even if only confined to tooth-drawing, or if a youth was apprenticed to a dentist, he was entitled, under certain conditions, to pay a small fee and become a registered dentist. I mention this to show that consequently the men who have since arisen have not the remotest claim to consideration—they are just parasites of the most recent growth. The opportunity was, however, too good to be lost, and grasping the fact that the confidence-trick might here be played, a host of unschooled and incompetent people has arisen who, day by day, by all manner of subterfuges, are attempting to deceive the public. Their plan usually is to adopt the role of a company or a public institution, as if their personal names be used in connection with the word dentist or its equivalent they are openly violating the law.

For the moment these charlatans, trading on the credibility of a too-confiding public, are having a small innings, but recent prosecutions have been entirely against them, and it is likely that ere long the *intention* of the Dental Act, as well as its *letter*, will be vindicated. The chief plea of these persons is that *their* operations are conducted painlessly, knowing that this is the best "draw" to get hold of the people. I need hardly point out that they are generally adventurers who are quite incapable of rendering the services necessary, but also that when they secure assistants with any useful knowledge, they must of necessity be of an unreliable and untrustworthy type, to lend themselves to people of this description. The exorbitant charges and the unskilful work we have seen from these places must be our excuse for offering this word of warning against such establishments. In this connection I would refer to advertising. The British Dental Asso-

ciation has its foundation laid on two bases :—(1) A man must be, either by examination, or because of practice prior to 1878, registered under the Dental Act ; (2) He must not exhibit show cases, nor advertise or pursue other unprofessional modes of practice.

The first point I have already dealt with. The second is a difficulty not readily understood. To elucidate it, I am sure I cannot do better here than quote a passage from the presidential address of Mr. Charles Tomes, F.R.S., in Newcastle last year, who said :—" It is unfortunately the case that in all branches of the medical profession, and very especially in ours, the ear of the public is sometimes to be caught by self-assertion, and the many hydra-headed forms of quackery. It is sometimes asked why, when the manufacturer or the dealer advertises his goods without exciting the smallest adverse comment, should it be considered disgraceful for a barrister, a stockbroker or a medical man to advertise himself. The difference is not far to seek, though it is often overlooked. The one advertises an article which he wishes to make known to the public, and it is greatly to their convenience that he should do so ; the one extols a thing, the other extols a man—himself. And there is this further difference, the thing may be new, all that is said about it may be true, but this can hardly be the case with the personal advertisement, for all knowledge that is of importance in a professional sense is very soon public property, for each to make use of as his abilities serve ; but it would hardly have the effect he desires were the advertiser to say, ' I am even as other men are ; ' he must brag in some form or it would be no good, and when he brags he can hardly be truthful." In conclusion : having reviewed the fact that the dentist is a necessity, that his manner of training, if faithfully carried out, is eminently qualified to produce fitness for his work, and that we have much to gain and to do by association, let us see to it that we are active members. We need strengthening by unity. Numbers are not everything, but they are a stimulus. Our standard of eligibility, of course, places a limit on us in this respect, and it cannot be lowered, but there are yet in our district many men whose canons of practice are good, but they are continuing in the old course of isolation. Let us remember those who in the early days of our Association laboured in and out of season for the profession, and so be stimulated to do something for the common good. For ourselves and to ourselves the call must ever be to advancement. There are yet fields of research in our specialty untrodden. It is not for us to more than indicate the lines ; doubtless the trend of the individual mind will have much to do with determining the direction of special work. But whether our preference is for the abstruse and scientific, dealing with the histological and the pathological ; or in the chemical laboratory, helping us to the use of more perfect fillings, and the like ; or if, on the other hand, our tendency is to perfect practical methods in operative work, or in the carrying

out of prosthetics, there is abundance of room for development. It is, however, necessary in all these things, if we would help, that we should be careful to record, first for ourselves, and afterwards for others through our Journals, the results of these labours. Finally, may I venture to point out that the revolutions in methods and evolutions in knowledge and practice will only become consolidated in so far as the truest standards of ethics are observed. This is called "a money-getting age," and I do not wish to be so pharisaical as to suggest that the dentist, in common with others, does not expect to be fairly paid for his work ; but what I wish to urge is that all our labours shall be our best. It may be that at times we are crowded with work, and we, knowing the indigence of our patient, have to work for fees that are altogether out of measure to the work done, or what is far worse, it will happen now and again that when our best labours have been given—given, too, with a whole-heartedness and enthusiasm that has no money equivalent—we shall not find the gratitude and appreciation we know we deserve. Let us not, however, be discouraged. Let us be true to ourselves, and taking every needful means to keep in closest touch with the best methods of practice and every real advancement, carry these out to the best of our ability. It will thus matter little to us whether we are counted slow and plodding, or whether we have the huzza of the crowd. We shall have better pay than this—the satisfaction of duty faithfully done in the sight of an approving conscience.

The MAYOR moved a vote of thanks to the President for his address, and Mr. ROGERS seconded the proposition, which was agreed to and acknowledged by the President, who moved a vote of thanks to the Mayor and the Chairman of the Property Committee for the use of the Town Hall, and the President and Board of the Hull Royal Infirmary for the use of that institution.

The MAYOR replied on behalf of those connected with the Corporation.

Mr. J. A. FOTHERGILL gave a short account of the value of collar crowns as attachments for the bands of dentures, and explained a typical case which came under his observation.

Mr. CUNNINGHAM, in following, said he was convinced that the development of collar crowns was going to have a permanent influence on the mechanical work of the future. At the present moment the bulk of the profession assumed a very "cloudy" view in regard to crown-work.

The CHAIRMAN said their time was somewhat limited, therefore he asked if there were any other casual observations.

Mr. HARDING referred to the case of a young child who sustained a fractured jaw and was placed under the treatment of a local medical practitioner. It then came under his observation, and was successfully treated, the union being made perfect and the articulation unimpaired.

Mr. BLANDY exhibited two specimens for lowering or raising the bite, which were detachable, Howarth's block bite being used.

Mr. FRANK HARRISON then delivered a paper on "Replantation," (which will appear as an Original Communication).

Mr. BLANDY spoke of a case of replantation twenty years ago, and the patient had the tooth now. He also related a case of a boy who had four teeth smashed in a coal mine. The boy was taken to the infirmary, and he (Mr. Blandy) asked for the teeth. They were found in the pit covered with dust, and taken to the infirmary late at night. They were washed and replanted, a splint made, and they healed up all right.

The CHAIRMAN also mentioned a case which came under his observation.

A symposium on the British Dental Association followed, Mr. I. Renshaw first reading a paper entitled "What the British Dental Association has done for the Dental Profession." (The paper will appear as an Original Communication.)

Mr. GADDES followed, taking for his subject, "What the British Dental Association ought to do for our Profession." (The paper will appear as an Original Communication.)

Mr. T. E. CONSTANT dealt with "How the British Dental Association can help the Public to better Dental Service." (The paper will appear as an Original Communication.)

Some discussion took place as to whether the papers should be dealt with at the meeting or the informal one in October, and the latter suggestion was agreed upon.

The PRESIDENT said he could not let the opportunity pass without thanking the Eastern Counties Branch, Mr. Rose and Miss Rose, Mr. Fernald, Mr. Cunningham, Mr. Lennox and Mr. Madin, for the assistance rendered during the meeting of the Midland Branch.

Mr. CUNNINGHAM, who was invited to speak, said they must have a little more tenacity of purpose, and men should not be sent to the Central Board, and allow any weakness to be exhibited. If the right thing was to be done it should be done. They outside of London, when there, received perfectly fair treatment—there was no doubt about that. But there were men who were afraid to speak out, and what was more, they had not the courage of voting; they could speak their sentiments at branch meetings, but did not carry them out on the Representative Board. It was suggested that more time should be given for discussion, but they had had to hunt for subjects to deal with. He was a member of the Representative Board and shared the responsibility, and he was not ashamed of the part he took there. He favoured the idea of standing committees being appointed to deal with the work of the Association, but did not think the time had come for increasing the difficulties of examination.

Mr. BRUNTON moved and Mr. GADDES seconded a hearty vote of

thanks to the local committee for the arrangements made for the reception of the members, which was warmly accorded and acknowledged by Mr. T. AUDAS and Mr. J. G. WALLIS.

Afterwards the Mayoress of Hull (Mrs. C. Richardson), who was accompanied by the Mayor (Ald. Richardson), entertained the members and friends to tea in the banqueting hall of the Town Hall.

In the evening the annual dinner was held at the Station Hotel, the President, Mr. J. C. Storey, presiding. Seated to the right and left of him were the Mayor (Alderman Richardson), the Sheriff (Councillor Crooke), Mr. F. Harrison, Mr. R. M. Craven, J.P., Dr. J. Wright Mason (Medical Officer of Health), Mr. A. E. White (Borough Engineer), Dr. Holder (Chairman of the Corporation Electric Lighting Committee), Dr. Elliot (Senior Physician to the Hull Royal Infirmary) and most of the Honary Staff of the Infirmary; Alderman Sherburn, M.B. (Chairman of the Managing Committee of the Victoria Children's Hospital), and the House Staff of the Children's Hospital. The Vice-chairs were occupied by Mr. T. Audas and Mr. J. G. Wallis.

The PRESIDENT submitted the loyal toast, which was cordially drunk.

Mr. R. ROGERS proposed "The Town and Trade of Hull."

Alderman Dr. SHERBURN proposed "The British Dental Association and the Midland and Eastern Counties Branches." Mr. ALEC KIRBY and Mr. G. CUNNINGHAM acknowledged the toast.

The SHERIFF proposed "The Local Medical Charities and the Dental Benevolent Fund," Dr. ELLIOTT and Mr. F. HARRISON responding.

After this toast the box of the Benevolent Fund was passed round, when the sum of £6 3s. was raised.

Mr. W. E. HARDING proposed "The British Medical Association and the Hull and East Riding and North Lincolnshire Branch," to which Dr. J. WRIGHT MASON responded.

Mr. J. G. WALLIS proposed "The Visitors," to which Mr. R. M. CRAVEN responded.

The health of "The President" was also drunk.

A most attractive programme of music was rendered by Mr. A. Spring, Mr. G. W. Haller, and Mr. Fred. J. Harper.

On Saturday several of the delegates enjoyed an excursion to Bampton Cliffs, near Flamborough Head. Saloon carriages were engaged, and on the outward journey refreshments were provided by the Local Committee.

Metropolitan Branch.

A MEETING for demonstrations, which was attended by some 80 or 90 members and visitors, was held on Thursday, June 20, at the National Dental Hospital. Mr. J. H. Badcock, in mounting Logan

crowns, showed the methods he adopts at different stages. Mr. A. E. Baker demonstrated the use of Hastings foil in a lower molar. Mr. Baldwin showed the possibility of soldering within the mouth. Mr. Humby filled a cervical cavity with cohesive foil, using a modification of the Herbst method for getting and keeping the rubber dam above the margin. Mr. Rushton filled a cavity with cohesive gold, without applying rubber, and depending upon a saliva pump. Messrs. F. J. Bennett and W. J. May had an interesting selection of microscopic specimens on view, and Mr. Spokes showed models of cases of Immediate Regulation.

The President, Mr. E. Lloyd-Williams, invited those present to partake of refreshments, an offer which received due recognition.

Central Counties Branch.

THE Eleventh Annual Meeting will be held at the Birmingham Dental Hospital on Saturday, July 20 — President: Mr. F. W. Richards; President-elect: Mr. J. Humphreys.

PROGRAMME.

9.30 a.m.—Council Meeting.

10 a.m.—General Business Meeting and Election of Officers (members only).

10.30.—General Meeting (open to visitors). The President's Valedictory Address; Mr. J. Humphrey's Inaugural Address; Casual Communications.

11.15.—Demonstrations in the Conservancy Room: Mr. H. R. F. Brooks, "Filling with Cohesive Gold;" Mr. J. Mountford, "Filling with Non-cohesive Gold;" Mr. J. E. Parrott, "Adaptation of Logan Crowns;" Mr. F. R. Howard, "Adaptation of Richmond Crowns;" Mr. A. E. Vickery, "Packing Vulcanisable Gold." Mr. H. N. Grove will show some new cases of Restoration of Facial Deformities—with patients; Mr. A. T. Hilder will show a case of Phosphorous Necrosis, and will give notes on treatment.

Mr. J. Whittles will exhibit a series Microscopical Slides and Photographs. There will also be on view a collection of mechanical appliances and of dental specimens from Mason College.

1.30.—Luncheon at the Grand Hotel.

2.30.—Members will be conveyed to the Egbaston Botanical Gardens. A Concert will be given by a Military Band.

Afternoon tea will be provided by Mrs. Humphreys.

The Botanical Gardens, with their pleasantly laid out grounds, with fine specimens of carpet-bedding and a recently added Alpine Garden, together with the splendid collection of glass houses, in which tropical

plants, orchids, ferns, and the flowers in season may be seen in perfection, should render a visit to them a most delightful one.

6.30.—Annual Dinner at the Grand Hotel, Birmingham. Tickets 6s. (without wine). Evening dress.

The President-elect kindly invites members to the lunch and the visit to the Egbaston Gardens.

All members of the Association are invited to attend.

7, *Newhall Street,*
Birmingham.

A. E. DONAGAN,
Hon. Secretary.

Southern Counties Branch.

THE Annual General Meeting of this Branch was held on Saturday, June 22, at the County Hotel, Salisbury. The following gentlemen were present :—Mr. H. Beadnell Gill (Vice-President, who took the chair in the absence of the President, Mr. J. H. Whatford, through illness), Dr. Walker (President-elect), Messrs. J. H. Redman (Hon. Treasurer), S. J. Hutchinson, L. Read, D. Hepburn, J. H. Reinhardt, J. Howard Mummery and Stephen Hoole (London), F. J. Van der Pant (Kingston-on-Thames), Arthur King (Guildford), Vernon Knowles (Reading), H. L. Farebrother (Salisbury), H. O. Colyer (Ryde, Isle of Wight), Morgan Hughes (Croydon), J. C. Foran and W. Barton (Eastbourne), J. J. H. Sanders (Barnstaple), and F. V. Richardson (Brighton).

The minutes of the last meeting were taken as read.

The HON. SECRETARY read letters of regret for non-attendance from Messrs. J. H. Whatford, Martin Henry, George Henry, W. Harrison, J. Dennant, J. Ackery, A. J. Woodhouse, F. Canton and A. Kendrick.

The report of the HON. TREASURER (Mr. Redman) was postponed to the next meeting. Mr. Lawrence Read was appointed auditor.

The following report of the Council for 1894-5 was adopted on the motion of Mr. BARTON, seconded by Mr. VERNON KNOWLES.

COUNCIL'S REPORT, 1894-5.

The Council herewith presents its Eighth Annual Report, and in doing so wishes to draw attention to the satisfactory work done by the Branch during the year. Ten new members have joined, against one resignation, and four meetings have been held—the Annual at Eastbourne in June, one at Canterbury in October, Redhill in January and Brighton in April, from which it will be noticed that the policy inaugurated in recent years of visiting outlying towns of the district embraced by the Branch has been adhered to, and with success whether viewed from the standpoint of the numbers attending the

meetings, or the quality of the papers read, or the demonstrations given. Your Council has appointed a sub-committee of its members to deal with alleged cases of infringement of the Dentists Act, and after careful investigation a test is being prepared for the Business Committee of the Representative Board. The following programme is proposed for the ensuing year :—October, 1895, at Richmond; January, 1896, at Beckenham; April, 1896, at Brighton (demonstrations); June (Annual), 1896, at Maidstone.

In conclusion, your Council wishes to place on record its thanks to those gentlemen who have so ably assisted them with papers and demonstrations.

Mr. BEADNELL GILL, after expressing regret at the unavoidable absence of the President, then read his Valedictory Address for him.

VALEDICTORY ADDRESS.

GENTLEMEN,

It is now my duty to say a few words before retiring from the honourable position to which, by your kindness and courtesy, I was elected twelve months ago, and I shall only detain you a few minutes because we have a lengthy programme before us, and, moreover, we are all looking forward to an address from my successor in this chair, which is sure to be of very great interest. When I addressed you last year I said that as we intended to extend our meetings and to go further afield, I hoped, as a result, we should have an increase in the number of our members. As you all know, we have visited Eastbourne, Canterbury, Reigate, Brighton and now Salisbury, and have thus practically covered the whole district included in our Branch, and my expectations have been fulfilled, for during the year ten new members have joined our Branch (the largest increase to our number since 1889), and we have had one resignation only.

The occasions have been so recent, and are still so fresh in the recollection of those present, that it will be unnecessary (as it might be invidious) to particularise the subjects which have been from time to time brought under the notice of our Branch, but I wish to express my gratitude to those gentlemen who have so kindly contributed to our enjoyment. It seems to me that there can be no surer way of increasing the prosperity of our Branch than by visiting each county in turn, inviting gentlemen to read papers and encouraging "Casual Communications;" such communications, from their eminently practical character, having their origin for the most part in our daily work, are not only sure to be instructive, but I have often observed a more animated discussion to follow a "Casual Communication" than a paper which, however excellent, has cost the author hours of his leisure time to prepare. There are many of us actively engaged in practice who can ill afford the time necessary to prepare an elaborate paper, yet who are conscious of possessing ideas or results of ex-

perience not without value in smoothing the path of practice for others. This is merely a suggestion of mine, and I gladly leave it in the able hands of my successor to deal with as he thinks best.

I wish now to express my thanks to you all for the great kindness shown to me during my year of office. I have been conscious of duties imperfectly discharged and opportunities let slip, and I have, therefore, the more appreciated your tolerance. To our Vice-president I return my sincere thanks for the help and advice he has always so kindly and so readily given me, and especially would I thank our Hon. Secretary, Mr. Richardson, for the very great interest he has taken in his work, and for his readiness at all times to render me assistance. His duties have been by no means light, but he has accomplished them, if he will allow me to say so, with marked ability and tact.

It now only remains for me to induct my successor, and I have the greatest possible pleasure in doing so, for Dr. Walker has in many ways proved his great love for his profession, and so far as this Branch is concerned, has ever shown the greatest possible interest. In vacating this chair in his favour I have comfort in feeling that whatever our Branch may have suffered in the year 1894-95 it is sure to more than regain in the year 1895-96.

Dr. WALKER then took the chair, and moved a hearty vote of thanks to Mr. Whatford for the exceptional success with which he had discharged his duties during the past year, which was carried with acclamation.

After a vote of thanks to the Vice-President and other officers had been carried, the President delivered the following inaugural address.

INAUGURAL ADDRESS.

GENTLEMEN,

I thank you heartily for the privilege of presiding over the meetings of 1894 and 1895 of the Southern Branch of the British Dental Association. I have no claim upon the members for such a distinction, except the general interest I have taken for years in the advancement of dental surgery. My short address will be retrospective in character, and you will allow me to carry you back to the thirties and forties of this century. The Medical Directory contains a personal history of the qualified and registered dentists of Great Britain, and I shall refer to a few personal histories therein recorded. Messrs. Cartwright, Parkinson, Bell, Sheffield, Rogers, Sir Edwin Saunders, Sir John Tomes, and Mr. Salter. The history of each of these men is peculiarly interesting to me and is well worth your consideration; the Cartwrights for their lectures and demonstrations at King's College, especially in manipulation of the elevator for lifting teeth; the Parkinsons for the high character of crowning or pivoting teeth; Bell for his pathological knowledge and publications; the Sheffields for their

wondrous power of introducing soft gold leaf in every form of cavity ; Arnold Rogers, Thomas Arnold Rogers, and Sir Edwin Saunders ; all so well known to you that I need not specify their distinctive works of pre-eminence. The record of Sir John Tomes has a remarkable interest for all present. In 1839, Sir John became an undergraduate of the University of London. In 1841 his first press communication was published on the construction of forceps. Read his personal history by referring to the Medical Directory. Sir John Tomes conceived the idea that dental surgery should be acknowledged by the College of Surgeons, but from 1839 to 1859 would not present himself for examination until the College of Surgeons recognised dental surgery as a special branch of surgery, although attendances at lectures, hospital practice, and resident staff appointments had been completed for many years. Sir John Tomes considered that Parliamentary authority should be given to the College of Surgeons. Sir John Tomes, assisted by his colleagues on the Council of the Odontological Society, succeeded in obtaining legal powers enabling the college to conduct examinations and grant licences, provided a dental hospital and school were founded, the entire responsibility of financing these institutions resting on the personality of Sir John and his few colleagues. The dental curriculum was modelled greatly on Sir John's suggestions. In 1858 the dental hospital and school were founded in in Soho Square. Sir John was inspired to give clinical demonstrations every Wednesday. To Sir John Tomes we are indebted for the first series of clinical teaching. His pupils have carefully followed the lines of teaching he then laid down. The sequence to these facts is that one and all (dental surgeons of the present generation) have been educated either by or through successive pupils of the one great master—Forsyth, Coleman, Walker, C. S. Tomes, Hutchinson, David Hepburn, Smale, Canton, Claude Rogers, Robert Woodhouse, Hern, Colyer and others.

In the thirties we have referred to the life and early education of Sir John Tomes. We will now enquire as to the condition of dental surgery prior to the foundation of the Dental Hospital and School. It was a secret science. Dental surgeries were then closed to all except the operator and the patient. The operators were unwilling to disclose their methods, and the patients were equally unwilling to permit it to be known that they had recourse to the dentist. The doors of the surgeries were frequently locked by the request of the patient. The relation of one case that came under my notice will explain my meaning. One morning a lady sought an interview with me. She stated her husband was bedridden. On the previous day her husband's front tooth had fallen out, the first tooth he had ever lost ! It was with great difficulty I preserved my gravity, as this husband had masticated with a full set of Ash's tube teeth for twenty years, a profound secret through the whole of his married life. Parents

and children, all and severally would bind their dentists to secrecy when attendance was required for the adjustment of false teeth. The existence of these relations are abundantly sufficient to show why dental surgeries were only open to the operator and the operated. The only education open to students of dental surgery at this period were :—(a) Instruction afforded by the dentist to whom the student was articled ; (b) the out-patient department of general hospitals by the assistant house surgeon, who treated diseases of the mouth. Diseases of the teeth were only treated by extraction. Within the recollection of many present, dental surgeons were first appointed to general hospitals, and very lately did the authorities vote funds for operations other than extractions. It was only through the friendship of three dental friends I obtained clinical instruction, viz., Mr. Henry Smale, Mr. Thomas Arnold Rogers, and Mr. J. R. Mummery. These friends obtained special patients to give me in their own surgeries clinical instruction. As you are well aware—a vacuum is the strongest motor power to induce suction. My mind and brain were a perfect vacuum, and the suction power was only equalled by the opportunities. I have alluded to my personal difficulties that you may estimate the profound prejudices Sir John Tomes overcame in giving to his dental students by his clinics his accumulated stores of knowledge, and but for the life of men of his aspirations we should all, in every probability, occupy the same dwarfed condition of our predecessors. Gentlemen, I ask you to lend a hand in this good cause with all the fervour of my nature. The British Dental Association and its branches are the outcome of Sir John's and James Smith Turner's efforts in passing through Parliament the Dentists Act. Our annual and periodical meetings are held to induce friendship between our brother dentist, and to show we are a commonwealth indeed. Knowledge possessed by each is the common property of the whole body of its members. The record of James Smith Turner, given in the Medical Directory, points to the fact that by the combined efforts of Sir John Tomes and James Smith Turner, the Dental Act of July 22, 1878, obtained for us a legal status of dental surgeons. The teaching powers of Sir John Tomes and James Smith Turner's successors are now very much crippled by the inadequacy of the buildings of the Dental Hospital of London. I will not waste your time in proving this fact, for I think there is no member present who does not accept this statement as fact. The authorities of the Dental Hospital are using every means in their power to obtain funds to erect a building equal to the necessities of the profession. Will you, as pupils of Sir John Tomes, assist the authorities in continuing his noble work by obtaining funds. Collections from every church in Great Britain would soon cancel the difficulties of the position of the committee and staff of the dental hospital. The majority of dental surgeons have influence in church life by their membership. We are monthly appealed to for funds of

various charitable causes. Let us all add our importunities and obtain from our rectors and vicars a special collection for the Dental Hospital of London.

A vote of thanks to the President for his interesting address was proposed by Mr. HUTCHINSON, seconded by Mr. READ and carried unanimously.

On the nomination of the Council the following officers were elected :—President-elect, Mr. J. H. Redman ; Vice-presidents, Mr. J. H. Whatford and Mr. S. Lee Rymer ; Hon. Treasurer, Mr. J. H. Redman ; Hon. Secretary, Mr. F. V. Richardson.

The following were elected by ballot on the Council for three years :—Messrs. H. B. Gill, H. L. Farebrother, Arthur King and C. Foran.

In a short paper Mr. BEADNELL GILL started a discussion on "Newland Pedley Crowns," which was joined in by Messrs. VAN DER PANT, REINHARDT, WALKER, RICHARDS and SANDERS.

Mr. J. HOWARD MUMMERY showed some very interesting microscopical slides and would have shown more had the accommodation been better.

Mr. REDMAN reported a case of a patient between 96 and 97 cutting a wisdom tooth.

Mr. GILL reported a case of a patient between 82 and 83 cutting two wisdom teeth and a supernumery lateral.

A hearty vote of thanks to the chairman brought the meeting to a close.

The President afterwards hospitably entertained the members and friends to luncheon, to which about fifty sat down, including the Mayor, Town Clerk, and a large number of medical men in Salisbury, and then took them a pleasant drive to Old Sarum.

The sum of £5 2s. 6d. was collected for the Benevolent Fund.

Eastern Counties Branch.

The Eastern Counties Branch held its Annual Meeting at the Royal Hotel, Grimsby, on Saturday, June 22. The chair was occupied by the retiring President, Mr. Alexander Kirby, L.D.S. (Bedford) ; and there were also present the President-elect, Mr. R. P. Lennox (Cambridge), Mr. G. Cunningham (Cambridge), Dr. Savery (Clee-thorpes), Messrs. J. E. Husbands and A. P. Spurr (Grimsby), A. S. Jones (Stamford), A. Jones (Cambridge), H. W. Tracy (Bury St. Edmunds), R. Payling (Peterborough), T. M. Howkins (Grimsby), A. Hopewell-Smith (Boston), J. K. Mackintosh (Gainsborough), F. W. Williams (Bedford), and the Hon. Secretary, Mr. W. A. Rhodes (Cambridge). A letter was read from Mr. H. F. White, the Hon. Treasurer.

HON. SECRETARY'S REPORT.

The HON. SECRETARY reported that during the past year the branch had gained two new members, and there had been no resignation. The meeting held last year at Bushby Hall, Watford, in conjunction with the West Herts Medical Association, was of exceptional interest, and the Council wished to thank all those who assisted in making it such a success, whether from a practical, a scientific, or a holiday point of view. It might not be within the knowledge of those present that the British Dental Association had recently instituted proceedings against two persons in that town (Grimsby) for offences against the third clause of the Dentists Act. In one case the words "Dental Surgery" were used, and in the other the word "Surgery." Both defendants pleaded guilty and were fined one guinea and costs. The Council had to record with regret the death of Mr. James Parkinson, formerly the Hon. Treasurer of the British Dental Association, and who was the first member of the Association to be elected hon. member of the branch.

On the motion of Mr. CUNNINGHAM, seconded by Mr. HUSBANDS, the report was adopted. The accounts were subsequently audited and passed, a number of the members present, after an appeal from the chair, paying their subscriptions for the current year.

Ipswich was mentioned as the place at which to hold the next annual meeting of the branch. The final choice was left in the hands of the Council.

Mr. HUSBANDS moved that Mr. Rhodes, their present but retiring Secretary, should be the President-elect. He had been Secretary for many years and had carried on the work in an able manner, and as he was retiring from the secretaryship he thought it was only right that they should mark their appreciation of his services.

Mr. CUNNINGHAM, in seconding the proposal, referred in similar terms to the excellent services of Mr. Rhodes.

The motion was carried unanimously.

Mr. RHODES, who was cordially received, said the time had come when he thought it would be to the advantage of the branch to have a new secretary. Having referred to his eleven years in office, he said that though he had wished that he would have been able to attend a future meeting in an unofficial capacity, he would, if it were their wish, take the presidency, and try to do his duty and everything he could for the advantage of the Association.

Mr. Hopewell-Smith was then unanimously chosen as Secretary, Mr. H. W. Tracy, Mr. A. Kirby, and Mr. R. W. White were elected on the Council, and Mr. A. Kirby and Mr. Hopewell-Smith were nominated to represent the branch on the Central Board. Mr. Rhodes will continue secretarial duties for another year, Mr. Smith's term of election being three years.

Mr. KIRBY then gave his retiring address. It seemed to him, he said, only a few days ago since he was inducted in that chair—time fled so—and now it was time to say good-bye. It had been customary to give a valedictory address, though he thought they were frequently voted a bore. He thought, seeing the work they had to do that day, he ought not to keep them long. Referring to the innovations which marked last year's gathering at Watford, he said the innovation this year would be the absence of a valedictory address. He should just like to thank them all for their great kindness and support, which had made his work light and pleasing, and he asked them to extend the same courtesy to the gentleman who was to follow him, who would fill the chair with honour and exert himself in all things for the advantage of the Association.

Mr. LENNOX then assumed the chair, and was received with enthusiasm. His address was on the subject of mechanical dentistry, his object being to provoke the critical faculty by contrasting some of the methods he had come to prefer with those given in the text-books. Having stated that he had read what Balkwill, Hunter, and Richardson had to say on mechanical dentistry, he remarked that one of the things which had long struck him most forcibly had been the comparative isolation in which each of them worked, at any rate as regarded mechanical work, and the difficulty of getting to know how others worked. For himself he was bound to say that he owed little, at any rate consciously, to any text-book whatever, having been led into his present method of practice by the endeavours to solve the problems which presented themselves from time to time with the aid of what he had always valued as an excellent early training under a thoroughly practical man. He then pointed out how, in one way, the difficulty of isolated work might be got over. When in London the other day he paid a visit to the institution which was being so ardently promoted by their friend Mr. Cunningham. His purpose in mentioning the institution was to point out the opportunities it offered for post-graduate teaching as well as a varied teaching of younger men. The method by which, as he understood, a young architect acquired his teaching appeared to be there very much to the point. The advantage which would attend a similar method of teaching for dentists must be too plain to need insisting upon, and his point was that the institution he had mentioned, with its roomy space and fine equipment, was just the place where such teaching could be given, and could be given, too, without arousing the jealousy which would naturally attend an attempt to introduce visiting into any of the existing schools.

A short discussion, although contradictory to the traditions of the branch, took place with regard to the technical points of the address, and a suggestion was made that a meeting should be arranged in London in order that some of the mechanical processes mentioned by the President might be tested and compared with others.

A vote of thanks was passed to the President for his address.

During the morning Mr. T. M. HOWKINS showed a patient who had suffered from a compound fracture of the superior maxilla. The members present appeared to take great interest in the case, which had been a difficult one to treat.

Mr. A. HOPEWELL SMITH gave a demonstration of "Photo-micrography," and explained the utility of a knowledge of the art from a professional point of view. The slides exhibited showed various sections of defective teeth.

Mr. CUNNINGHAM then read a paper on "The Treatment of Temporary Teeth." From statistics which had been prepared, he said, it was found in every hundred children between two and six years of age the number of those having dentures free from caries varied from 25 to 2 per cent. and even less. As early as the second year many children required dental treatment. Although all the teeth might be affected, yet the greater number of defective teeth were found in the molar region. Their object in treating the defective teeth in children at an early age should be not merely the filling up of the cavities, but an effort to retain them to fulfil their proper functions. He was strongly in favour of a regular periodical examination of children's teeth. The great point to be aimed at was to encourage parents to take their children to dentists when the teeth began to decay. If that were done the horrors of the dentist's chair would be dispensed with, and a large number of teeth would be saved. He quoted several cases in which the children had come to look upon a visit at the dentist's with pleasure.

A vote of thanks was accorded to Mr. Cunningham on the motion of Mr. KING, seconded by Mr. JONES, and supported by Mr. BRUNTON.

At the invitation of the President, Mr. R. P. Lennox, the members were entertained to luncheon, which took place in one of the upper rooms of the hotel.

After partaking of luncheon, the members were taken for a trip down the Humber. Through the kind permission of Mr. Williams (Port-master), the s.s. *Marple* was placed at the disposal of the party.

The annual dinner was held in the evening. An admirable menu was served, and the tasteful decoration of the tables evoked much admiration. In the regrettable absence of the President, the chair was occupied by Mr. Alexander Kirby.

During the evening a number of songs and recitations were given, and Mr. Hopewell Smith's humorous contributions were greatly appreciated. An enjoyable evening concluded with the singing of "Auld Lang Syne."

Western Counties Branch.

President : Mr. A. Kendrick, L.D.S.Eng.

President-elect : Mr. J. J. H. Sanders, L.D.S.I.

THE Annual Meeting will be held in the Council Chamber of the Guildhall, Barnstaple, on Friday, August 2, 1895.

The order of the proceedings will be as follows :—

August 2.

9.30 a.m.—Council Meeting at the Guildhall.

11 a.m.—General Meeting of members for the transaction of business, at termination of which visitors will be admitted ; President's Address.

12 noon. — Paper by Mr. G. Thomson, L.D.S.Eng., on "The Advisability of Bridge Work."

1.30 p.m.—Adjournment.

1.45 p.m.—Luncheon at the Royal Fortescue Hotel, by invitation of President, to members and friends.

3 p.m. — Demonstrations at the residence of the President :— Mr. J. H. Gartrell, "A small Furnace for Porcelain Crowns and Bridges ;" Mr. W. A. Hunt, L.R.C.P.Lond., M.R.C.S.Eng., "Taking Impressions of the Mouth in Plaster of Paris ;" Mr. G. Thomson, L.D.S.Eng., on "Filling overlapping Incisors with the use of the Perry Separator."

7.30 p.m.—Dinner at the Royal Fortescue Hotel. Tickets, exclusive of wine, 7s. 6d. each. Members intending to be present are requested to make early application to the Hon. Secretary.

August 3.

A Coach Excursion to Lynton and Lynmouth. Luncheon will be provided at the Royal Castle Hotel, Lynton. Tickets for the Coach, 5s. Tickets for the Luncheon, 2s. 6d., exclusive of wine.

It is particularly requested that members will kindly reply by means of post card as soon as possible, or not later than July 25, in order to facilitate the arrangements.

Subscriptions, due August 1, should be paid to the Hon. Treasurer, J. T. Browne-Mason, 6, Southernhay, Exeter.

Gentlemen desirous of becoming members should apply to the Hon. Sec. of the Branch, T. A. Goard, 6, Southernhay, Exeter.

Headquarters will be at the Royal Fortescue Hotel, Barnstaple. Other Hotels : The Golden Lion and Trevelyan's Temperance.

As the General Election will take place within the next three weeks, it has been thought very advisable to postpone the Annual Meeting of the Branch from July 19 and 20 to August 2 and 3.

ORIGINAL COMMUNICATIONS.

On Dr. Black's Investigation into the Constitution of Teeth.

By CHARLES S. TOMES, M.A., F.R.S.

(Continued from page 332.)

AMONG the unexpected results of these experiments is the fact alleged that a number of teeth taken from the same individual differ in the percentage proportion of ash left after ignition: and, although I have in my previous communication given reasons for distrusting the absolute accuracy of Dr. Black's results as to the second and even to some extent the first place of decimals—reasons which experiments which I have since made serve to strengthen in some respects and to weaken in others—yet I in no way distrust his larger measurements; indeed, as will presently be seen, my own experiments go to confirm them in general.

It appeared to me a matter of *a priori* probability, which met with experimental confirmation when I made mixtures of calcium phosphate and carbonate and calcined them, that the neglect of the fact that calcium carbonate is reduced to quicklime by heat would to some extent falsify the conclusions drawn from the weight of the ash. But though this remain quite true, it is an illustration of the danger of prophesying unless one knows, for in actual experiments with dentine I have found that the error is less than I had supposed it would be, because only a portion, and sometimes only a small portion, of the calcium carbonate gets reduced under the circumstances.*

The error varies from a negligible quantity up to about .02 of the total weight.

As this difference between teeth taken from the same mouth seemed a thing so very unlikely I set to work to investigate this matter for myself. For this purpose I took three abso-

* Fresenius (quantitative analysis) took .795 dry calcium carbonate; after intense ignition for fifteen minutes it weighed .6482, after thirty minutes it weighed .6256, and after one hour .5927. This latter weight could not be further reduced; but this would give the percentage of calcium as 74 per cent., whereas it is really only 56 per cent., so that a good deal of carbonic acid remained and could not be expelled by heat.

lutely perfect dentitions from skulls which I happened to have in my possession.

My mode of procedure was to cut the teeth across at their necks, to clean out the dried remains from the pulp cavities, and then with sharp drills in a lathe to cut out in the form of fine shavings all the dentine both from the crowns and the roots which I could get out without running any risk of having any enamel or cementum in the shavings.

By adopting this method (instead of taking a slice at the neck as Dr. Black did) I was able to get a larger quantity from each tooth and so to diminish the chances of experimental error, while I also avoided the risk of having a variable quantity of cementum.

Besides this the shavings so obtained present more surface to the air, and so are more certain to have the carbon completely burnt out during ignition. The shavings were dried for some hours in a constant temperature oven which did not vary more than from 212° to 215° at the outside; they were then weighed, incinerated, and weighed again without any removal from the platinum crucibles in which the ignition took place. They were then moistened with ammonium carbonate to restore any carbonic acid that might have been driven out, dried, raised to a dull red heat to expel the superfluous ammonium carbonate, and then weighed again.

The result of this double weighing was to show that there had been generally some loss of carbonic acid, so that it is probable that most of Dr. Black's weighings of the ash are a trifle too low.

I may mention that I set to work with perfect confidence to determine, by various methods, the amount of carbonic acid in dentine, with the sole result that I now understand why the various analyses of dentine give such very different quantities of carbonates. For, using every possible precaution, I was unable to get quite constant results when dealing with small quantities (about three grains) taken from a single sample of ivory; the exact determination of very small quantities of carbonic acid presents great difficulties.

However, as it is my intention to carry much further the investigations which I have commenced, and to publish them with full details as to manipulation elsewhere, it will be sufficient here to give a mere note of results.

My analyses, so far as they are complete, of the three entire sets of teeth, confirm Dr. Black's statement that there are differences in the amount of mineral matter (as indicated by the ash) in teeth taken from the same individual, but I find also an unexpected fact which is of much interest. The differences are not fortuitous, for I have found that the incisors and canines uniformly contained a smaller portion of mineral matter than did the molars.

In one set the incisors contained as little as 70 per cent. of inorganic matter, while the molars contained 72.7 per cent., and the average of the incisors and canines grouped together, and embracing some fifteen teeth, gave 71.5 per cent., while the average for the molars, some thirteen teeth, gave 73.6 per cent. of salts.

In face of this small discovery I set to work to closely examine Dr. Black's figures, and I may remark in passing upon the great value in any scientific research of putting everything down in full, even when it has no apparent significance at the moment. Thus Cavendish, recording what he thought was an experimental error, has left on record that he had Argon under notice and was within an ace of discovering it.

So also with Dr. Black's figures; taking all his records of the ash of teeth taken from the same individuals, reducing them to percentages of dry dentine to render them comparable with my own, and striking an average for all incisors and canines on the one hand, and for all molars on the other, I find that his figures show the same point, namely, that the molars are more highly calcified than the incisors and canines. This is equally true, whether we take each individual mouth, or the average for all mouths; which latter averages work out as 71.7 inorganic matter for the incisors, and 72.3 for the molars. It will be noticed that his actual figures do not quite agree with mine, but the existence of a similar relation over so considerable a number of teeth may be held to fairly establish the fact that the difference does exist.

As Dr. Black points out, the amount of water which is lost in drying depends upon the temperature at which the drying is conducted, dentine which had been dried at 200° F. for twelve hours, losing further weight if the temperature is raised to 220°.

As the water is then such a variable quantity, it is far better to dry the dentine at 212° F. and set down the loss up to that point as free water, and to regard that which is lost at higher temperatures as combined water, in the absence of any more positive knowledge on the subject.

Tribasic calcium phosphate (which is the form in which

much of the lime is present), when prepared by wet process, retains several atoms of combined water, some of which escapes at ordinary temperatures. Dried at 212° F. it retains one atom (Ludwig), or two atoms (Berzelius), but dried at 400° it becomes anhydrous, so that it is probable that this salt may be accountable for some at least of the water lost at temperatures above 212° F.

Most analyses of dentine give the ash as the percentage of salts, and the rest, which is the loss on ignition, as organic matter. But it is by no means certain that this is a correct way of looking at it. For water that was in chemical combination would probably have been wholly expelled from the ash, whilst only the free water would have been got rid of by the preliminary drying at 212° F., so that the loss on ignition represents not only the organic matter, but also the combined water, if there be any.

To elucidate this aspect of the question, a series of analyses by entirely wet methods was undertaken, the results of which will be detailed in a subsequent communication.

In carrying these through, a point which is of interest to histologists came out. One has been accustomed to think that, in decalcifying by means of dilute acid, nothing but the lime salts was removed, and that the organic basis was left untouched. But I find that, using the dilute hydrochloric acid of the Pharmacopœia with equal parts of water, a very considerable amount of organic matter, closely related to or identical with gelatine, is dissolved, so that tannin causes an abundant precipitate in the fluid. Hence we might expect that the finer details of microscopic structure, such as, for example, the delicate connective tissue demonstrated by Mr. Mummery, would be lost, or partially lost, in decalcified sections, which as a matter of fact does really happen. Indeed, by sufficiently prolonged maceration in dilute acid almost the whole of the organic basis comes into solution, so that in decalcification it is desirable to exercise the greatest care, and to use acid as dilute as will ensure the purpose, and that for as short a time as possible.

A WAY OF CLEANING RUSTY INSTRUMENTS.—M. L. Brodie, in *Items of Interest*, gives the following as an effective method of cleaning rusty instruments:—"Fill a suitable vessel with a saturated solution of chloride of tin in distilled water. Immerse the rusted instruments and let them remain over night. Rub dry with chamois after rinsing in running water, and they will be of a neat silvery whiteness."

LEGAL INTELLIGENCE.

The British Dental Association v. Rycroft and Browning.

At the Grimsby Borough Police Court, before the Mayor (Alderman PALMER) presiding, Alderman JACKSON and E. BANNISTER, S. OATES, J. K. RIGGALL and J. BARKER, Esqrs.

June 13, 1895.

JAMES RYCROFT, 202, Victoria Street, Grimsby, was summoned for that he, on May 30, not being then registered under the Dentists Act, 1878, and not being a legally qualified medical practitioner, did unlawfully take or use an addition or description, namely, "Grimsby Dental Surgery," or some other name, title, addition or description implying that he was registered under the said Act, and in that he was specially qualified to practise dentistry.

A similar summons was issued against Arthur James Browning, he having used the word "surgery" as a name, title, addition, or description, he not being registered under the Dentists Act.

Mr. R. W. Turner, barrister-at-law, prosecuted on behalf of the British Dental Association. Mr. Bloomer appeared for James Rycroft, and pleaded guilty. Mr. A. Mountain represented Arthur James Browning.

Mr. TURNER: I proposed dealing first with the case of Rycroft, but I believe that in the next case, from information I have from the solicitor, there will also be a plea of guilty, and if that plea were taken it would save time and I might go through the law on both cases.

Mr. MOUNTAIN: I assume the Court will hear us in mitigation of damages.

The COURT: Oh, yes.

Mr. MOUNTAIN: Then I appear for Browning and we shall plead guilty.

Mr. TURNER: These are prosecutions, your worships, undertaken under the provisions of the Dentists Act, which provides that people who are not registered, and who are not qualified practitioners, cannot hold themselves out to the public as being specially qualified, that is to say, they must

not hold themselves out to the public in such a way as to induce the public to believe that if they go to their surgeries they will have the benefit of skilled advice and assistance. Section 3 of the Dentists Act of 1878, says, "That after the first day of August, 1879, a person shall not be entitled to take or use the name or title of dentist (either alone or in combination with any other word or words), or of dental practitioner, or any name, title, addition or description implying that he is a person especially qualified to practise dentistry unless he is registered under this Act," and by the 26th Section of the Medical Act, 1886, it is further declared, "That the words, title, addition or description, where used in the Dentists Act, 1878, include any title, addition to a name, designation or description, whether expressed in words or by letter, or partly in one way, or partly in the other," and it is further provided that any person who is guilty of such an offence shall be liable, on summary conviction, to a penalty not exceeding £20. The provision is an important provision, because it prevents these people who are not qualified from foisting themselves upon the public as dentists when there are persons qualified, who are perfectly willing to do the work. This is not a case of trades' unionism. It is a Parliamentary statute framed for the benefit of the public health, and, therefore, it is a duty to see that it is stringently enforced. Mr. Rycroft has admitted to the British Dental Association an advertisement in the "Reliance A B C Railway Guide," which has, I believe, a considerable circulation in this neighbourhood, and in that advertisement Mr. Rycroft uses the following description: Grimsby: "Dental surgery"—a qualified dental practitioner could not say more—"202, Victoria Street, artificial teeth, teeth extracted without pain by the aid of gas, or the new anæsthetic cocaine, which acts locally only." Now these are serious things in the hands of an unqualified man—anæsthetics, and things like that. In addition to this advertisement we have on his door: "Manufacturer of artificial teeth." That is the way these people who are not qualified to practise run as close to the wind as they can. Then we have "Consultations free," and manufacturers do not give free consultations. "Teeth extracted painlessly," which clearly shows that these artifices are employed to see how near they can run to the Act without actually getting within the four

corners of it. And now with reference to Mr. Browning. He carries on business at Hainton Square, Grimsby, and calls his place a "surgery." Whether it is merely a surgery, or a dental surgery, is not named, but it clearly must be a place where operations are performed. He has an advertisement, showing a gentleman with hardly any teeth in his head. This is before he visits Mr. Browning. He afterwards comes out smilingly with a beautiful set of teeth—this is after paying a visit to Mr. Browning. Then his advertisement reads, "Teeth mounted on gold, platinum, dental alloy, vulcanite, coralite, &c., perfect for eating and speaking, equal to nature in appearance; old sets and misfits remade and repaired. Teeth extracted by the freezing process for a shilling,"—there can be no doubt that he carries on business as a dentist—"painless artificial teeth at the usual prices." I have yet to learn that artificial teeth are painful. Then we have numbers of testimonials from various people, and it is advertised that teeth are extracted "by chloroform, ether, and the freezing process," all of which are dangerous operations.

The MAYOR: They are operations anyone can perform without being a dentist. Anyone may extract a tooth.

Mr. TURNER: And anyone may cut off a leg.

The MAYOR: But they must take the consequences!

Mr. TURNER: And so must the person who extracts the tooth.

The MAYOR: It is a well-known fact that anyone may extract teeth. The gentleman against whom you are proceeding is a total stranger to me, but I do wish to say that any one is allowed to extract teeth.

Mr. TURNER: And I say anyone is allowed to, or may cut off a leg.

The MAYOR: But it is teeth we are dealing with.

Mr. TURNER: Whether they do it or not they are not qualified persons, and Parliament has taken the view that they should not be allowed to hold themselves out as people who are qualified, and have received the necessary training.

The MAYOR: I take a different view. As far as a medical dentist is concerned your law is right, but any chemist or druggist who places himself out to extract teeth is quite within his right, but he has no power to call himself a manufacturing dentist.

Mr. TURNER: As there is a plea of guilty I do not think it is necessary to go into that. I want to point out to you, Sir, that the statute says you must not hold yourself out as a dentist when as a matter of fact you are not a dentist.

The MAYOR: I quite agree with you there.

Mr. TURNER: It is a serious matter, after all, and a matter which is in your discretion to deal with. True, anybody may do these things, but they are not allowed to charge for them, and moreover, the Act lays down penalties for persons holding themselves out as qualified dentists when they are not registered. Mr. Browning admitted that this was his advertisement, and he said he thought it was rather hard he had not been warned. Perhaps he did think so, but these people run as close as they possibly can, and you have to take them as they are.

Mr. BANNISTER: Have all the men in the business passed examination?

Mr. TURNER: To answer that question would mean to go into the whole history of the Act. In 1878, when the Dentists Act was passed, it was enacted that where certain persons who were engaged practising as dentists, but who had not received the proper training required by Parliament, made out declarations to the effect that for some time they had really been in practice as dentists, they should be allowed to go on the register before a certain date in 1879. Further provision was also made for those men who were employed as dentists' assistants merely in the workshops, and under certain circumstances they could be registered at a later date. But as to all other people, after a certain date since the passing of the Act, they had to pass a qualifying examination in dentistry before they could be recognised by the General Medical Council as entitled to be upon the register. Practically nearly everybody who wished to practise as qualified dentists have passed examinations and received the necessary instruction. I have been in other prosecutions under this Act, and learned magistrates have generally found that it is an offence which must be dealt with, and I leave the matter in your worships' hands.

Mr. BLOOMER: I should like to say one word or two in mitigation of the fine which may be inflicted upon my client, Mr. Rycroft. It is not necessary to say how long he has been

in the town; I dare say he is well known to most of us here. He has resided here fifteen or sixteen years, and before he commenced to practise for himself he was engaged to another practitioner, Mr. Smith, whom he believed was fully qualified. When Mr. Smith left the town Mr. Rycroft commenced on his own account, and he asks me to express his regret that through his carelessness—I do not suggest it is ignorance, because he knew he ought to have been registered—he has not got a certificate or passed his examination. But I should like to say, I take it that no one in this court will believe that Mr. Rycroft has wilfully held himself out with the intention of deceiving the public. I do not think it possible. He is so well known in the town that I do not think it would be possible for people to be deceived by him. Therefore it is not really a case of the public being deceived, it is undoubtedly a case of the practitioners in the town taking up this process, and, under the circumstances, I shall ask your worships, when you come to consider my client, to say that the offence is not so serious as it has been made out to be by the learned counsel, and that it will be met by a very slight fine.

Mr. MOUNTAIN: I also wish to say a few words on the same lines; I wish to point out that in my case Mr. Browning has used the word "surgery," and this is the only word about which any complaint is made. At least, I ask learned counsel if I may take it so.

Mr. TURNER: You must not take it so.

Mr. MOUNTAIN: This advertisement describes Mr. A. J. Browning's place as "surgery," and I submit that under the Act it is a very doubtful question—whether Mr. Browning has committed any offence.

Mr. TURNER: He has pleaded guilty, and you must not go into that now.

Mr. MOUNTAIN: My client wrote to the Association and expressed his regret. He said: "I am surprised to have a summons issued against me for using the word surgery on some hand bills I had printed some time ago. It was not my intention to do anything wrong. I did not know I was going against the Dental Act, and not being informed, I was not aware I was. If you think I was I am willing to pay a small fine, if you can see your way clear to withdraw the summons." In other words he was not willing to fight a test

case, because he would have had to pay the costs whatever the decision might have been. I do not think that an ordinary person reading the Act would think he had committed an offence. The Act says that after a certain date a person shall not be entitled to take the title of dentist, either alone or in addition with other words, or any name, title, or description implying that he is registered under this Act, and it is very doubtful in my opinion whether the word "surgery" can be held to come within the meaning of the Act as a name, title, addition, or description implying that he was registered under the Act. The words are——

Mr. BANNISTER: But what does your advertisement say about gas, &c.?

Mr. MOUNTAIN: Oh! I think that is a slip of the tongue on the part of the learned counsel; there is a warning in this circular that chloroform, &c., is only administered by a medical man for which a fee is charged—a fee of 10s. 6d.

The COURT: That scarcely makes much difference.

Mr. MOUNTAIN: There is no suggestion in the advertisement that Mr. Browning would administer these things himself. A qualified surgeon is called in to administer the chloroform. I think in a case like this, where, as my learned friend says, it is perhaps close to the wind, a notice might have been sent in the first instance and a compromise made. Mr. Browning has been in practice three years, and it can scarcely be said that he has wilfully gone into a contravention of the Act in this instance, and so I shall ask your worships to inflict merely a nominal fine.

The MAYOR (after a consultation of the magistrates in private) said: The magistrates have given these two cases due consideration, and taking into consideration that an offence has been committed, and that these are the first cases which have been before us in the town, we fine each of the defendants one guinea, with 11s. costs, £1 12s. each.

PULPITIS WITH EXPOSURE.—Dr. Kirk states that instantaneous relief results from the application of thymol, either the powdered crystals, or a saturated solution in chloroform applied on cotton, under a suitable temporary stopping.

Chastey v. Ackland.

IN the case of *Chastey v. Ackland* the judgments of Lords Justices Lindley, Lopes, and Kay upon the appeal of the defendant from the order made by Justice Cave at the trial at the Exeter Assizes were delivered on June 17, their Lordships having, at the close of the arguments on May 17, taken time to consider their decision.

The counsel engaged were Mr. Cozens Hardy, Q.C., M.P., and Mr. Foote for the appellant, and Mr. Warmington, Q.C., M.P., Mr. H. E. Duke, and Mr. H. Broughton Edge for the plaintiff in the action.

Lord Justice LOPES said that the trial before Mr. Justice Cave resulted in judgment for the plaintiff. The action was brought to restrain the defendant from maintaining new buildings beyond a certain height, on the ground that they obstructed certain ancient lights to which the plaintiff was entitled, and also on the ground that they obstructed the current of air at the back of the plaintiff's premises, and thereby created a nuisance. The learned Judge held that, so far as the obstruction of light was concerned, judgment for £10 and costs would satisfy all that the plaintiff was entitled to, and against that there was no appeal. The appeal was against an injunction in mandatory form in respect of interference with the current of air, and the evidence led to the conclusion that there was some nuisance arising from the want of sufficient ventilation for the carrying away of bad smells. But it appeared that nothing of a disagreeable nature was brought to the plaintiff's premises by anything the defendant had done, the bad smells complained of having their origin on the plaintiff's own property. Every man had a natural right to enjoy the air coming to his premises pure and free from noxious smells and vapours, and any man who sent foul air to his neighbour's premises caused a nuisance, which was actionable. But a man must not impose upon his neighbour the obligation to keep away foul air from his premises, and he was unable to agree with Mr. Justice Cave that the plaintiff in this case had any claim against the defendant in respect of nuisance. The plaintiff had a right to the free passage of air, and to have any disagreeable smell carried away by a current of air passing through a defined channel. No one, however, had a right to prevent a neighbour from building on his own land, though the consequences might be to diminish the flow of air to the adjoining property. The complaint in this case was that the defendant, by erecting his new building to a greater height than the old, had intercepted the current of air passing between his premises and the plaintiffs. The claim was not to the air passing through some definite channel, and it had been decided that the right to air was not an easement within the meaning of the Prescription Act. The verdict for the £10 would stand, but the defendant was entitled to judgment upon that part of the case which related to interference with the air passage.

Lords Justices Lindley and Kay concurred, and the order of the Court was that the appeal should be allowed, and the judgment granting the injunction reversed—the plaintiff to have judgment for £10 in respect of the interference with light and the costs of the action, except so far as they arose, from her contention, with respect to the air. The defendant would have the costs due to that contention, and also the costs of the appeal.—*The Devon and Exeter Daily Gazette.*

REPORTS OF SOCIETIES AND OTHER MEETINGS.

Odontological Society of Great Britain.

THE annual meeting of this Society was held on June 10, Mr. FREDERICK CANTON, President, in the chair.

The minutes of the meeting of May 6 having been read and confirmed, the ballot for the election of officers was opened, and Mr. George Hern and Mr. G. O. Richards were appointed scrutineers.

The PRESIDENT stated that the necessary obligation forms had been signed by the following :—Messrs. Frank C. Porter, L.R.C.P.Lond., M.R.C.S.Eng., L.D.S.Eng. (12, Oxford Street, Nottingham); G. Arthur Peake (Alma House, Cheltenham); Francis R. Flintan (Tower Lodge, Weybridge).

The following gentlemen were elected non-resident members of the Society :—Messrs. William Jarvie, M.D.S. (105, Clinton Street, Brooklyn, New York); John William Tomlinson, L.D.S.Eng. (8, Warrior Square, St. Leonards-on-Sea).

TREASURER'S REPORT.

The TREASURER (Mr. S. J. Hutchinson) said the finances of the Society were in a flourishing condition. The total receipts were £541 2s. 6d., and the expenditure £444 6s. 10d., leaving a balance of £96 15s. 8d. The invested capital, which on October 31, 1893, was £3,571, had now increased to £4,026. He took the opportunity of thanking those members who paid their subscriptions through the bank, as it materially lessened the work and ensured greater accuracy in the accounts. When it was decided to alter the date of the annual meeting from January to June, there was some little discussion as to how the financial year should be regulated. It seemed somewhat anomalous that the financial year should terminate on October 31, and the annual meeting be held in the following June; but the accountant had reported that it would cause great confusion if the date to which the accounts were now made up was altered unless the date of the subscription was also changed, which would involve a large

amount of explanation and correspondence. It was therefore deemed desirable to continue the date of the financial year as at present.

The LIBRARIAN reported the donations to the Library. The number of books borrowed since January 1, 1894, was ninety-two, they being only lent to members, and not to students, as formerly. The Library was open on Mondays, Wednesdays, and Fridays from 6.45 p.m. to 8.45, but the attendance was rather meagre, and unless the room was more frequented the Council might not feel justified in retaining the sub-librarian's services on those evenings.

The CURATOR (Mr. Storer Bennett) said during the last month a large number of specimens had been sent to the museum. Mr. Gartley sent specimens of bone work, in which the teeth had been carved out from a solid piece of ivory. Mr. Bridgman, of Norwich, sent two temporary teeth, gemmated, removed from a boy aged 9. Mr. Mackley sent a left upper central and lateral incisor taken at the Dental Hospital from a boy aged 13. When 6 years of age he received a blow in the front of the mouth, necessitating the extraction of two or three temporary teeth and the removal of some portion of necrosed bone. On coming to the hospital the left upper central and lateral were perfectly loose, and on removal the central was found to have no root, but merely a cup-shaped depression and an extremely large pulp cavity. The case was an extremely good specimen of dilaceration, having the advantage of a clear history of injury. Mr. Merson, of South Molton, sent interesting specimens, including skull of a cart horse, the upper jaw of a young ox, and skulls of a very old dog and vixen fox. Mr. Morton Smale contributed five valuable specimens, including the skulls of a lion, of a Polar bear, an African sheep, a red kangaroo, and a young chimpanzee, each of which showed abnormalities. The mandible of the kangaroo showed an enormous amount of thickening from periostitis. Specimens occurring in hospital practice were also sent by Mr. Hankey, house surgeon of the Dental Hospital.

CASUAL COMMUNICATIONS.

Mr. MATHESON showed a case of odontome occurring in the right pre-maxillary region. It occurred in the practice of Mr. Jackson, jun., of Burnley. On its removal it was found that the right central incisor was present in a perfectly normal position at the bottom of the socket of the abnormal development.

Mr. THOMSON showed a tooth extracted last year from a man, who as long ago as 1869 was struck on the face by the jibboom of a yacht. He had frequently since that time suffered from swollen face and abscess, and several teeth had been removed. On consulting him Mr. Thomson advised the removal of the second molar, and this being done it was found that one of the roots was fractured. It

therefore appeared that the fractured part of the root had been kept in position for about twenty-five years.

Mr. BRUNTON showed a cervical clamp made by Mr. Woodward.

Mr. SIDNEY SPOKES exhibited a series of lantern slides illustrating cases in which permanent teeth in the upper jaw had erupted within the arch, being bitten over by the lower teeth, and in which the corresponding temporary teeth were persisting. The usual method of treatment was to extract the retained temporary teeth, to insert a plate, raising the bite and allowing the permanent teeth to be pushed out, but it might be supposed that cases occurred in which, when the upper teeth had been pushed or led to the cutting edge of the lower teeth, they refused to cross. The slides shown illustrated a simple, and he believed justifiable way, of treating such cases. The temporary teeth were extracted and their permanent successors grasped with forceps and forcibly advanced over the edges of the lower teeth. Where there were neighbouring teeth a silver wire interlaced was sufficient to hold the advanced tooth in its new position. In the cases brought forward four centrals and six laterals were all comfortably in good position, and responded to the application of heat. Of three cases of canines one only could be claimed as a success, although one other was now in good position. The forceps used were those usually employed for upper temporary molars, and might be conveniently guarded by india-rubber tubing on the blades.

Mr. CUNNINGHAM then read a paper upon "The Immediate Regulation of Irregular Teeth."*

Owing to the lateness of the hour the discussion upon Mr. Cunningham's paper and Mr. Sidney Spokes' communication was postponed to an evening to be fixed by the executive during the Session commencing in November next.

The PRESIDENT announced that the following gentlemen had been unanimously elected as officers of the Society for the coming year:—

PRESIDENT.—David Hepburn.

VICE-PRESIDENTS.—(*Resident*) Ashley Gibbings, John Fairbank, C. J. Boyd Wallis; (*non-Resident*), W. E. Harding (Shrewsbury), George Henry (Hastings), J. F. Cole (Ipswich).

TREASURER.—S. J. Hutchinson.

LIBRARIAN.—W. A. Maggs.

CURATOR.—Storer Bennett.

EDITOR OF TRANSACTIONS.—Edward Lloyd-Williams.

HONORARY SECRETARIES.—J. H. Mummery (Foreign), J. F. Colyer (Council), Clayton Woodhouse (Society).

COUNCILLORS.—(*Resident*) C. E. Truman, W. R. Humby, W. B.

* An extract of Mr. Cunningham's paper will be published when the adjourned discussion upon it takes place.

Paterson, Harry Baldwin, John Gartley, Cornelius Robbins, Sidney Spokes, Alfred Smith, G. D. Curnock ; (*non-Resident*) G. G. Campion (Manchester), J. McKno Ackland (Exeter), J. H. McCall (Leicester), T. Arkövy (Budapest), A. W. W. Baker (Dublin), F. E. Huxley (Birmingham), Geo. Cunningham (Cambridge), C. B. Mason (Scarborough), J. J. Andrew (Belfast).

The PRESIDENT then delivered his Valedictory Address. He said that during his term of office, extending over a year and a-half, in consequence of the alteration of date of the Annual Meeting, the Society had had twelve meetings ; nine papers had been read and some very interesting Casual Communications brought forward, one evening being given up to a microscopic display and general conversation. The members had dined together for the first time, the gathering, notwithstanding very inclement weather, being fairly good, and he believed the evening was well appreciated by those present. If the dinner was to become an annual affair he suggested that the date should be fixed somewhat later in the year. Owing to the actions of the secretaries the Society had started the session with a complete programme—a thing never before accomplished. It was gratifying to know that 55 new members had joined the Society since the last Annual Meeting ; the net gain, allowing for deaths, resignations and removals, was 40, bringing the number of ordinary members up to 409 ; in addition to that there were 35 honorary and corresponding members—a number which he thought was very much in excess of what it should be for so small a Society. Much larger societies limited their number to 10 or 12, and it would be well to follow their practice in that respect. In conclusion, he thanked the members for the support accorded to him during his term of office, especially his secretaries and colleagues on the Council.

Mr. ALFRED COLEMAN proposed that the best thanks of the Society be given to the retiring President for the very excellent manner in which he had fulfilled his term of office. It was his (Mr. Coleman's) great privilege to have had Mr. Canton as one of his pupils, and as they would naturally expect, he was a very attentive and diligent student, and very successful in the work which he carried out. It afterwards became his still greater privilege to become associated with Mr. Canton as a colleague, and they had worked together most harmoniously, as was the case with all their colleagues, for the benefit of the institution with which they were connected. Many of the members had had greater opportunities than himself of knowing the work carried out by Mr. Canton during his presidency, but the "Transactions" so admirably represented their proceedings, that reading them as he did very attentively, he could form some judgment at least of the excellent manner in which the duties of the President had been discharged, and for which he now asked the Society to accord a hearty vote of thanks.

Mr. MATHESON seconded the resolution, which was carried by acclamation.

Mr. BRUNTON proposed a vote of thanks to the officers of the Society, including the treasurer, the secretaries, the librarian and the curator. He could not say that they had all been pupils of his, but he knew the work they did, and the thoroughness and heartiness with which they did it.

Mr. VANDERPANT seconded the resolution, which was carried by acclamation.

Mr. ROBBINS responded.

The Society then adjourned.

MINOR NOTICES AND CRITICAL ABSTRACTS.

Angina Ludovici.

A CLINICAL LECTURE BY DR. PERRY.

THE lecturer remarked that after some consideration he had selected for the subject of his lecture the disease known as Angina Ludovici, the accounts of which in text-books were commonly somewhat brief and unsatisfactory. He then proceeded as follows:—

Having selected a subject, I naturally consulted Dr. Fagge's treatise on medicine, and there I found an account, very accurate as far as it went (as all Fagge's works are), but also very brief. He defines the disease as a diffuse inflammation of the tissues of the neck, which may or may not be accompanied with œdema of larynx. I then remembered in the obituary of Dr. Fagge, which appeared in *Guy's Hospital Reports*, an anecdote of Mr. Hilton, how that being at the bedside of a patient suffering from this disease, he asked the general practitioner in attendance why the breathing was so laboured, and proceeded to answer his own question by saying that the pneumogastric nerve was implicated in the inflammatory process.

Dr. Ludwig himself thus describes what he terms "the new kind of inflammation of the cellular tissues of the neck." He says: "Along with symptoms which precede a rheumatic, or rather, an erysipelatous angina, there develops, sometimes on both sides, generally on one side of the neck, a hard swelling, commonly in the tissue which surrounds the submaxillary gland, more rarely in that which surrounds the sublingual or parotid. This cellular inflammation spreads and similarly affects all the cellular tissue which it involves, spreading at first towards the chin, even to the opposite side, then downwards to the larynx and backward to the parotid, at the same time that it swells considerably. It involves in like manner all the inter-muscular planes and the muscles themselves between the mouth and the hyoid bone. The tongue rests on a floor of hardened tissue, deeply congested, which becomes more especially prominent and like a bolster in the mouth, just inside the symphysis of the lower jaw. The power of opening the mouth is much curtailed, and attempts to do so are pain-

ful. The tongue thus rests on a floor which is indurated and reddened, and it is pushed upwards and backwards; the movements of the jaw and the power of swallowing and speaking are materially interfered with. . . . During the further course of the disease the skin over the tumour begins to get red, particularly in places, and if it have not previously occurred, in the interior of the mouth there appear deposits of phlogistic lymph. The swelling under the tongue becomes softer as though serum had been poured out beneath the serous membranes and had partially coagulated. On the exterior, some parts have become locally softened and pit on pressure, and to the finger now give the feeling of crepitation, from the development of gas. Elsewhere a more distinct feeling of fluctuation is perceived, as if here and there it might come to active suppuration; this, however, does not actually take place, for the process either stands still or it recedes."

I may summarise the rest of his remarks as a description of gangrene and death in the "typhoid state."

As regards ætiology, Dr. Ludwig believed that an erysipelatous process underlay the disease, which either on account of "epidemic influences" or in consequence of some peculiar condition of the patient, was prevented from getting to the surface, and which then "determined to the deeper parts heterogeneous to its nature;" hence this gangrenous inflammatory condition of the cellular tissue was brought about: or it might be due to conditions proceeding from the nervous system as epidemic influence develops itself, so that the disease derives its tendency to gangrenous inflammation from the erysipelatous factor as in malignant carbuncle, and its tendency to induration and paralysis from the nervous factor, as in malignant parotitis."

The diagnostic points he makes are—first, the slight inflammation of the throat, which even when it exists disappears after a day or two; second, the peculiar wood-like induration of the connective tissue which will not receive impressions; third, the hard swelling under the tongue, with the bolster-like swelling around the interior of the lower jaw, of deep red or bluish-red colour; fourth, the uniform spread of the induration so as to be sharply bounded by a border of entirely unaffected cellular tissue; fifth, the escape of the glands, though the cellular tissue surrounding them is implicated.

I may now read to you my notes of a case of this kind that has been under my care in clinical.

The patient a male, aged 16 months, was admitted on April 24, with symptoms of acute laryngitis, which, in the absence of any affection of the fauces or skin, was considered to be of the catarrhal variety. On admission the temperature was 100·6°, pulse 113, and respiration 60. There was evidently considerable obstruction to the entry of air into the chest, the lower ribs being drawn in with inspiration. There was stridulous breathing and slight cyanosis. Physical examination of the lungs afforded no evidence of broncho-pneumonia or pleurisy. There was no swelling or redness of the neck. On the 25th the temperature was 102°, and the breathing still rapid. On the 27th the child seemed to be much better, the stridor having disappeared, and the temperature being lower (100°). On the 28th he was worse, with increased cyanosis, and a very feeble pulse. On the 29th the right side of the chest was dull behind, but the dullness did not seem to be absolute, and loud bronchial breathing with cracking râles was heard

both in front and behind. Hence it was thought that the pulmonary condition was that of consolidation. On the evening of this day the patient seemed rather better, but next morning he became suddenly worse and died about noon.

On *post-mortem* examination, the tonsils and fauces appeared to be quite normal, and the œsophagus was also free from disease. There was slight œdema of the arytaeno-epiglottidean folds, but otherwise nothing abnormal was detected. There was, however, a diffuse suppuration in the deep cellular tissues of the neck. A continuous tract of purulent infiltration extended on the left side of the neck from the level of the pharynx down into the anterior and posterior mediastinum, and in the anterior mediastinum there was suppuration apparently in the thymus gland, and from this the inflammation affected the pericardium at the base of the heart, and on opening the sac a little lymph with a patch of redness was visible on its inner surface. The suppuration was chiefly on the left side of the neck, but there was also some suppuration at the upper part on the right side. The whole of the left lung was covered with recent lymph, and in the pleura were 12 ounces of pus. The lung was compressed and small, but was not further examined, as it was required for the Museum. On the right side there was no inflammation of the pleura, but the lower lobe of the lung presented large areas of hepatization, of red and grey colour, at its hinder part. Pus taken from the cellular tissue at the upper part of the mediastinum was submitted to bacteriological examination by Mr. Pakes, and yielded an almost pure cultivation of the *staphylococcus pyogenes aureus*. The colon at its upper part present a "shaven-beard" appearance. The spleen weighed one and a-half ounces, the liver fourteen ounces, and the kidneys two and a-half ounces. Except as above described the viscera were normal.

I have to add two notes from Mr. Mumford, the Clinical Assistant's report, viz., that the patient seems to have been well up to the day before admission, and that on the 26th he was noticed to have a slight discharge from his left ear. This was unknown to me at the time, and I regret that the petrous bones were not specially examined, because, though I do not think it probable, we might possibly have found the cause of the cellulitis in them.

Now, I think we may assert confidently that all cases of Angina Ludovici are of *septic* origin, and although it is true that pus is not invariably found, one cannot say that it is never present. An acute septic process is, however, often rapidly fatal before pus has had time to form, and, as we know in the case of anthrax, certain micro-organisms may have little pyogenic tendency.

Now as to the causes of this disease:—

First.—Traumatism in its wide sense. These cases belong to the surgeon rather than to the physician, and I shall only enumerate them as follows:—Cut-throat, tracheotomy and other operations about the mouth and neck, gunshot wounds and other injuries of these parts, and impaction of foreign bodies in the larynx. A good case illustrating the last named cause is the subjoined:—

Emma K., aged 70, was admitted on July 22, 1891, under Dr. Goodhart for cellulitis of pharynx and chronic Bright's disease. She was well until the 18th, when she fell, striking her head and her shoulder. Dyspnoea ensued the next day. When admitted, there was tenderness with swelling on right side of neck. The skin over the sternum was

inflamed. On laryngoscopic examination, the epiglottis was found to be oedematous. In the evening her breathing became worse, and while her larynx was being examined she became unconscious and died. Nothing abnormal beyond bruise on left forehead was found on skin.

P.M.—There was a diffuse inflammatory infiltration of the connective tissue outside the epiglottis, chiefly on the left side and extending down on both sides between the thyroid and cricoid cartilages. On the left side of the inner surface of the epiglottis there was a raised, soft, swollen patch one-half inch by a third, yellow in colour, due to inflammation. At one spot there was a mark, which the pathologist considered to have been produced by a puncture. The spot referred to was close to the ventricle of the larynx. There was also a yellow staining of mucous membrane at a corresponding situation on the opposite side. There was no pus, but the connective tissue was swollen and yellow. It nowhere had a foul odour. Dr. Pitt, who made the autopsy, remarks:—"The most probable explanation is that there was some injury, due possibly to a puncture by a fish bone, or some hard sharp particle, to the left ventricular surface, and from this ensued an early cellulitis, in consequence of the condition of the kidneys."

The following case, recorded by a surgeon of University College, is an example of traumatic cellulitis following a scratch, unless, indeed, the case be one of anthrax, the bacilli not being detected.

A male, aged 49, was admitted with fulness beneath lower jaw, and on the right side of the neck a scab. Swelling rapidly increased, extending up the side of the neck behind the jaw and on to the chest. Patient felt "hot and cold by turns." The swelling was pale, and glands not enlarged. Skin normal; no pitting on pressure, and no pain on palpation. Floor of mouth thickened, but tongue not raised. Temperature 97.8° , and he did not feel very ill. Scab "like a variola pustule." Tracheotomy soon required, followed by surgical emphysema. At autopsy, no pus but much oedema, chiefly of the glottis.—*Lancet*, 1893, vol. i., p. 1312.

Next we come to cases due to extension of infection from the neighbouring parts, *e.g.*, sores in mouth (mercurialism), tonsillitis and laryngitis in diphtheria, scarlet fever and measles, suppurating glands in neck with or without caseation, alveolar abscess, periostitis (fractured jaw), and suppuration about tumours, *e.g.*, goitres or epithelioma of œsophagus. The disease may also occur as a complication of typhoid and pyæmia (in one instance after parturition).

To illustrate the formidable character which an alveolar abscess may assume, the following case is cited from the *Lancet* of October 25, 1879:—

A married lady, aged 23, suckling a child six months old, towards the end of August had a severe attack of toothache from taking cold. It was attended with swelling of the right cheek; the swelling passed down towards the neck, which was painful on pressure. As the patient had several carious teeth, nothing serious was suspected. The symptoms, however, did not yield to treatment, but were rather aggravated. Then inflammation of the parotid was diagnosed. The neck was stiff and very painful; it was indurated as far as the clavicles; the skin was shiny and tense, of a reddish-brown colour, and very painful when touched. The pharynx and fauces could not be examined on

account of the difficulty of opening the mouth. Swallowing was painful. The disease progressed during the next days. On September 5, after an attack of coughing, she spat up a quantity of very stinking pus. On September 7, the patient complained of apnoea, and was troubled with cough. Pulse was small, and there was oppression over the heart. The patient went off in a dead faint, which lasted some time. On the following day the pain and oppression in the chest were increased. She died in the evening.

The autopsy revealed extensive sloughing of the cellular tissue of the neck, with implication of the muscles. The parotid and sub-maxillary glands were gangrenous; the skin over the right side of the neck was also gangrenous; a quantity of very foetid ichor discharged itself after death. A communication was also found with the pharynx. The right lung was collapsed in great part, and the pleural cavity filled with a foetid serum in which flocculi were abundantly present. The left lung was undergoing caseous degeneration; its pleural cavity contained a quantity of unaltered serum. The pericardium was adherent to the lungs, and reddened on its exterior aspect; it contained a pint of sero-lymphatic fluid. The surface of the heart was everywhere covered with a layer of granulations, six lines thick.

Another cause, not usually recognised, is, I believed, to be found in an acute septic perichondritis of cartilage, analogous to acute suppurative periostitis of bones. The following case is an example:—

William W., aged 39, was admitted on April 2, 1891, under the care of Mr. Davies-Colley, for cellulitis of neck, the swelling lying under the lower jaw and extending from the right to the left sterno-mastoid. His illness was stated to have begun on March 28, with a sore throat, and shortly afterwards a small swelling appeared on the neck. For the last four days he had scarcely been able to swallow any solid food. Mr. Colley made an incision along the anterior border of the left sterno-mastoid, and evacuated a large quantity of foul-smelling fluid. On the 4th, he sleeps badly. On the 7th, an abscess noticed at the lower part of the back, which was opened next day. Foul-smelling pus and gas was evacuated. The patient sank on the 9th.

Post-mortem by Dr. Perry.—The parts of the neck were removed before I came into the *post-mortem* room. They were matted together by inflammation and oedematous, and on the left side there was a large area of necrosis affecting the thyroid cartilage, which was mostly stripped of perichondrium, and the great cornu of the hyoid bone on the left side was also necrotic and detached from the body of the bone. The cause of the necrosis was not evident, nor whether it was primary or secondary to a cellulitis that had been set up by some other cause. No such cause, however, was discovered. I could not learn whether the patient had had syphilis or not, and I am inclined think that the case was one of acute suppurative perichondritis resembling an acute suppurative periostitis and septicæmic in origin. The interior of the larynx was perfectly normal, and the disease clearly had not started there. There was also found a chronic ulcer of stomach and duodenum, and the patient had membranous colitis. The breach of surface in the stomach may have afforded a mode of ingress to the specific organism.

As to age, the disease is commonest from childhood to middle life, but it may occur later. As a predisposing cause may be mentioned

chronic alcoholism, as it appears that patients suffering from this disease have been for the most part addicted to drink.

Butchers, also, whose occupation exposes them especially to septic inoculation, more often contract the disease than others. The following example may be quoted:—

A male, aged 50, a butcher, was seized early in the morning with a severe rigor, dysphagia and great pain in the mouth and submaxillary region. Temperature a few hours later was 105, pulse 150, respiration noisy, due to swelling about the laryngeal orifice; headache, prostration, and cold sweat. Tongue pressed up against the palate by swollen sublingual tissues. Fauces could not be seen. Patient could neither swallow nor speak. Albuminuria to the extent of a sixth. Next day submaxillary œdema increased, with commencing redness of the skin, and spreading down the neck between the sterno-mastoids. Patient weaker and dyspnœa increasing. Incisions made in the middle line, one above the hyoid, and one over the cricoid. Tissues swollen, sodden and foul, and serous blood-stained fluid came out. Great immediate relief. No local condition, such as a carious tooth or ulcer of mouth, could be discovered.—*Lancet*, 1891, vol. i., p. 1258.

Many of the older writers, influenced by prevailing views of epidemic influences, described the disease as an epidemic, or at least as liable to occur in groups. This does not appear to be borne out by fact, but it is at least true that there are many cases of Ludwig's Angina, which have still to be regarded as idiopathic, meaning only by this term that we are unable to trace the manner in which the septic organism has gained access to the deep tissues of the neck.

It is possible, and indeed probable, that in certain inflammatory conditions of the upper respiratory and alimentary passages, organisms are able to go through the mucous membrane and so to reach the deeper parts.

It should be stated that the local manifestations of suppuration in the neck may be very insignificant, inasmuch as the mischief may be at first entirely beneath the deep cervical fascia, into the attachment of which I need not go in detail. From the arrangement of this fascia it follows that suppuration may make its way upwards beneath the floor of the mouth, backwards amongst the muscles of the neck, or downwards into the anterior and posterior mediastinum.

The chief symptoms of the disease are, or may be:—Fulness and tenderness in the neck—sometimes ill-marked and obscure, at others of an obviously phlegmonous character—sore throat and occasionally dysphagia.

A patient having the last-named symptom was some years ago under the care of the late Mr. Durham, and so marked was the difficulty in swallowing that he was suspected to be suffering from an aneurysm pressing on the œsophagus. However, at the *post-mortem* the cellular tissue of the neck was found to be infiltrated with pus. There is also often present dyspnœa, with quickened respiration. On examination of the mouth, nothing of importance may be seen. With the laryngoscope a little œdema of the epiglottis may be evident. In one instance an abscess was discovered opening between the epiglottis and tonsil.

Symptoms may also be present depending on the inflammation of nerve-trunks, the pneumogastric being most commonly implicated in

the suppurative process. The pleura and pericardium may also be affected by inflammation, and may speedily be filled with purulent effusion.

The temperature is, as a rule, pyrexial, but in the case of those who die very rapidly, it may be little if at all raised.

Treatment.—Some success has been obtained by the injection by carbolic acid in solution, but there can be no doubt that in the present day, and especially in hospital practice, the right treatment is by surgical methods. An early incision should be made, either in the middle line of the neck, or along the anterior border of the sterno-mastoid. In the way of constitutional treatment it is well to support the patient's strength with nourishing food, which may be administered by a tube (if necessary), and stimulants will usually be indicated.—*Guy's Hospital Gazette.*

OBITUARY.

Joseph Mills, M.R.C.S.Eng.

MANY old students of the Dental Hospital of London will hear with regret of the death of Mr. Joseph Mills, which occurred on May 29 at Andover. He was the son of the late Robert Mills of Inkpen, and was educated at Andover and Weymouth. He commenced his medical studies at Winchester as a pupil of Dr. Richards, and afterwards entered at St. Bartholomew's, where he became house surgeon to the late Sir William Savory. His health failed somewhat in 1886-7, but not until 1888 was any serious mischief discovered. In the spring of 1893 he gave up work and retired to Andover. During the last two years he led the life of an invalid, but he was always bright and cheerful, and was much delighted to see any of his old friends. He died quite suddenly on May 29 from pulmonary hæmorrhage. He leaves a widow and one daughter.

The Right Hon. Thomas Henry Huxley, P.C., F.R.C.S., M.D., F.R.S., LL.D., D.C.L., &c.

By the death of Professor Huxley, which occurred on June 29, the world has been robbed of one of her greatest thinkers, and a gap has been created which will not easily be filled. He was born on May 4, 1825, at Ealing, where he spent the early days of his life. In 1842 he entered as a student at

Charing Cross Hospital, and quickly became interested in the study of physiology under the guidance of Wharton Jones. In 1845 he passed the first M.B. of the London University, and a year later became a member of the Royal College of Surgeons of England. Following this he was appointed Surgeon to H.M.S. *Victory*, and subsequently to H.M.S. *Rattlesnake*, accompanying her on foreign service for four years. During this period Huxley worked hard in the intervals of his duties, and sent home his results to the Linnæan Society, by which they were ignored, and in 1849 forwarded one paper on the Oceanic Hydrozoa to the Royal Society, by whom it was accepted.

In 1851 he was elected a Fellow of the Royal Society, being then in his twenty-sixth year. In 1854 Sir Henry de la Beche, the Director-General of the Geological Survey, offered him the post, vacated by Edward Forbes, of Professor of Palæontology and Lecturer on Natural History at the School of Mines, which he held for many years. Here he delivered in 1863, to classes of working men, his lectures on Man's Place in Nature, which led to an infinite amount of discussion and objurgation, and his lectures on Ethnology and on Our Knowledge of the Causes of the Phenomena of Organic Nature. In 1863 he was appointed Hunterian Professor at the Royal College of Surgeons of England, and held the post for more than five years. He twice filled the post of Fullerian Professor of Physiology at the Royal Institution. In 1869 and 1870 he was President of the Geological Society, and in the latter year President of the British Association for the Advancement of Science, when he delivered his celebrated address on Biogenesis and Abiogenesis. At this period of his life he was what other men would have called fully engaged with the duties of his office at the Geological Museum and School of Mines, and his work during the next ten years is to be found in the transactions of the various learned bodies of which he was a Fellow; but he found time to lecture or to write on the Physical Basis of Life, on Descartes, on the Automatism of Animals, on a Piece of Chalk, on Problems of the Deep Sea, on Some of the Results of the Expedition of H.M.S. *Challenger*, on Yeast, a Treatise on Comparative Anatomy, a Treatise on Physiography, another on Hume, an exhaustive article on birds in the "Encyclo-

pædia Britannica," and papers, essays, and reviews too numerous to specify, but which may be seen, or are referred to, in the pages of *Nature*.

In 1883 he was elected President of the Royal Society, giving in the same year the Rede Lecture at Cambridge. His incessant work in physics, chemistry, physiology, biology, and geology began now to tell upon his powers, and after serving on the Select Committee of the House of Commons on the Education, Science and Art Departments, and inaugurating the Marine Biological Institute, he was obliged to go abroad and shortly after to resign the Presidentship of the Royal Society.

By his telling and lucid writings, Huxley did much to popularise the doctrines of Darwin, and but for him they would have been far more slowly understood and accepted by those who had received no scientific training. Perhaps imbued with that deep feeling, "the discovery of truth," he pursued doctrinal theology with ardour, and his controversies with Mr. Gladstone and others must be still fresh in the minds of many. He was an avowed agnostic—a term he himself coined, and one which was, and is, confused by both laity and clergy with atheism. When one views his many abilities as scientist, controversialist, teacher, writer and philosopher, one cannot shun the fact that his loss to the world is great, and that it may be years before his like is seen again.

MISCELLANEA.

WESTERN COUNTIES BRANCH.—We are asked by the Hon. Sec. to state that at the last meeting of the Western Counties Branch a pair of lower wisdom forceps was shown.

A METHOD OF REDUCING DISLOCATIONS OF THE LOWER JAW.
—A correspondent (G. T. Mockett) to the *British Medical Journal* for June 15, states that he has found the following method most effective in the reduction of dislocation of the lower jaw:—"The hands have free play outside the cheeks, which act as a pad. The forefingers rest in the hollow at

either side on the anterior border below the coronoid process of the ascending ramus, the middle fingers on the external border of the angle below the ear allowing firm gentle pressure backward and downwards to antagonise the tension of the muscles whilst the other fingers are brought under the horizontal rami of the jaw with the thumbs on either side the symphysis, so giving the counter action. Anterior, posterior, or lateral force can be so commanded as to allow the parts by combined gentle manipulation to glide gradually into apposition."

CHANCRE OF THE GUMS.—A case of chancre of the gums is recorded in the *Medical Week* (p. 296):—The patient was admitted into hospital suffering from sore throat and jaundice, and a few days subsequently a well marked roseola and other syphilides made their appearance, though there was no trace of chancre on the genital organs, lips or tonsil. The upper gums, however, bled in one spot, which was crescent-shaped and indurated, and found to be of a chancrous nature. Similar cases are reported in the same number by Dr. Barthélemy and Besnier.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen, having passed the necessary examinations, have been admitted Licentiates in dental surgery: Frederick George Atkinson, Charing Cross and Dental Hospitals; Julius Barthroppe Bateman, Charing Cross and Dental Hospitals; George Llewellyn Bates, Charing Cross and Dental Hospitals; Francis Montague Fitz-Walter Bellaby, Owens College and Victoria Dental Hospital, Manchester; John Henry Bennett, Charing Cross and Dental Hospitals; Albert Edward Bettridge, Charing Cross and Dental Hospitals; George Henry Booth, Owens College and Victoria Dental Hospital, Manchester; Stewart Ross Bowtell, Charing Cross and Dental Hospitals; George Henry Bowden, Guy's Hospital; Percy Burton, Middlesex and Dental Hospitals; Alfred Cahill, Guy's Hospital; Edward Kemp Cannell, Charing Cross and Dental Hospitals; Ernest Edward Cardwell, Charing Cross and Dental Hospitals; Albert James Collett, Guy's Hospital; Horace Cook, Guy's Hospital; John Willie Dalton, Charing Cross and Dental Hospitals;

Ernest Frank Day, Charing Cross and Dental Hospitals; Meyer Gosschalk, Charing Cross and Dental Hospitals; Thomas George Jenkins, Middlesex and National Dental Hospitals; William Johnston, Charing Cross and Dental Hospitals; Clarence Albert Harry Keall, Guy's Hospital; Frederick Little, University College and Dental Department, Royal Infirmary, Bristol; Norman Henry Lean, Middlesex and Dental Hospitals; Herbert Edwin Mackley, Middlesex and Dental Hospitals; Edwin Clarence Platt Masters, Middlesex and National Dental Hospitals; John Hilditch Mathews, Charing Cross and Dental Hospitals; Edwin Morgan, Guy's Hospital; Edwin Henry Mountford, Charing Cross and Dental Hospitals; Fritz Heinrich Arthur Muhlenkamp, Guy's Hospital; Walter Salmon Nowell, Middlesex and Dental Hospitals; Cecil Gilbert Pearse, Charing Cross and Dental Hospitals; William Frederick Pedler, M.R.C.S. Eng., St. Bartholomew's and National Dental Hospitals; George Herbert Price, Charing Cross and Dental Hospitals; Arthur Henry Quinby, Liverpool Dental Hospital and Liverpool Royal Infirmary School of Medicine Dental Department; John Lewis Shields, Liverpool Dental Hospital and Liverpool Royal Infirmary School of Medicine Dental Department; David Sydney Stevens, Guy's Hospital; Alick Condell Strand, M.R.C.S. Eng., Middlesex and Dental Hospitals; Thomas Edward Sugden, Middlesex and National Dental Hospitals; Harry Percy Taylor, Guy's Hospital; Joseph Theakstone, Owens College and Victoria Dental Hospital, Manchester; Henry William Tice, Middlesex and National Dental Hospitals; John Tindall, Charing Cross and Dental Hospitals; Walter Henry Trick, Guy's Hospital; James Sims Wallace, B.Sc., M.D., C.M. Edin., Glasgow Dental Hospital, the Dental Hospital of London, and the National Dental Hospital; Herbert Wallis, Guy's Hospital; Charles Henry Hughes Williams, Charing Cross and Dental Hospitals. Fifteen gentlemen were referred back to their professional studies. All candidates referred at this examination will be required to produce, before admission to re-examination, a certificate of three months' additional study at a general hospital and a special dental hospital, the precise attendances required at each hospital being left to the discretion of the respective hospital authorities.

EDINBURGH DENTAL STUDENTS' SOCIETY.—At a meeting of the above Society, held in the hospital on Friday, June 21, in the presence of the Dean and a number of the hospital staff, Mr. J. A. Biggs, L.D.S., of Glasgow, gave a clinic on "Artificial Velum acting Physiologically." By means of casts, models, &c., he explained his method of making dentures for clefts, and then showed an excellent case in the mouth of a patient aged 16, suffering from congenital cleft, which by an ingenious method of moulding was so constructed as to embrace the uvulæ, and thus remain in position during movements of deglutition. Mr. H. B. Ezard, L.D.S., at this meeting demonstrated the method of making the Morrison Seamless Crown, in both gold and platinum. Each of the crowns was made in about six minutes.

PROPOSED MEMORIAL TO PROFESSOR HUXLEY.—It has been decided to establish in connection with the Charing Cross Hospital Medical School, a permanent memorial to one of its most distinguished students, the late Professor Huxley. To this end the following Committee has been formed: Sir Joseph Fayrer, K.C.S.I., F.R.S.; Sir Guyer Hunter, K.C.M.G. (both old friends and fellow-students of Prof. Huxley at the Charing Cross School); Dr. Watt Black (Hon. Treasurer); Mr. I. H. Morgan; Mr. Stanley Boyd; Dr. Montague Murray, and Mr. H. F. Waterhouse (Hon. Secretary). It is proposed that the Memorial shall take the form of an annual lecture and a science scholarship and medal; but the final decision will depend upon the wishes of a general meeting of the subscribers. Subscriptions will be received and acknowledged by Dr. Watt Black at the Charing Cross Hospital Medical School.

APPOINTMENTS.

ALVERSTONE GABELL to be Dental Surgeon to the Dorking Cottage Hospital.

FREDERICK ROSE, L.D.S., R.C.S.Eng., to be Hon. Dental Surgeon, Stanley Hospital, Liverpool.

JOHN BUTTERWORTH, L.D.S.Eng., to be Tutor to the Victoria Dental Hospital.

W. H. GOODMAN, L.D.S.Eng., to be Dental Surgeon to the Devon and Exeter Dental Hospital.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—Reading in the last issue of the Journal a very interesting case recorded by Mr. Underwood, of adapting an artificial nose for one lost by Lupus, I should like to say that the mode of treatment is by no means a novelty. I have not the dates at hand without searching old diaries, but it is certainly more than twenty-six years ago that I constructed two of these nasal organs for patients who were both under treatment—I believe for spinal or other deformity—by the late Mr. George Taylor, a well-known maker of surgical appliances in Norwich. It was his idea entirely that an artificial nose, with "dummy" spectacles attached, would greatly improve the facial deficiency, and being a friend and neighbour I consented to carry it out, and for that purpose modelled a plaster nose characteristic of the face, and made a silver one (vulcanite then being only in its infancy); the "specs" were soldered to the upper bridge, and I painted the object to the complexion of the patient, and Mr. Taylor was very proud of the appearance of the girl. The other case was a boy, but further than the fact of its being equally successful in appearance and use I have now no knowledge, though I recollect that the nasal twang in each case was considerably lessened by the "wearing of the noses." From a foolish feeling of its not being purely dental work I did not wish to be known then in connection with these "silvery appliances." With this confession of a weakness, now long since buried and gone,

I am, Sir,

39, St. Giles Street, Norwich.

Yours very truly,

July 1, 1895.

BOSWORTH HARCOURT.

"General Surgery and Pathology for Dentists."

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—The review of Dr. E. W. Roughton's book in the last number of the Journal seems eminently unfair. Your reviewer shows his bias in the first line—"The author of this volume boldly states in his preface," &c. In what is the author so "bold"? Simply in stating his object. Surely there can be nothing wrong in that! Whether the author fulfils his object in the book he writes may very well be left to those who read it. What I particularly desire to call attention to is the fact that the reviewer practically condemns the whole book because of a statement in the preface and the title of the work itself. He takes up side issues as to how much the student and practitioner should know? Not a single word as to the able writer (who has long been a teacher of dental students), his clear and lucid style, or *the manner* in which the book is written.

For my own part, I have read each chapter as it appeared with great pleasure, and I feel quite sure that such a book will be of immense use to both dental students and practitioners.

I am, Sir, faithfully yours,

R. DENISON PEDLEY, M.R.C.S., L.D.S.Eng., F.R.C.S.Ed.

July 2, 1895.

BOOKS RECEIVED.

METHODEN UND NEUERUNGEN AUF DEM GEBIETE DER ZAHNHEILKUNDE, von Wilh. Herbst. *Verlag*: Odontologische Verlagsanstalt, Berlin, N. W., 23, Claudiusstrasse.

L'ARTICULATION ALVÉOLO-DENTAIRE CHEZ L'HOMME, par Edouard Beltrami. *Paris*: Librairie J. B. Baillière et fils, 19, Rue Hautefeuille, 1895.

THE INTERNATIONAL JOURNAL OF MICROSCOPY AND NATURAL SCIENCE, The Journal of the Postal Microscopical Society (vol. v. part 27, third series).

The Dental Cosmos, The Medical Review, The Medical Press and Circular, Guy's Hospital Gazette, The Dublin Journal of Medical Science, Birmingham Medical Review, L'Odontologie et la Revue Internationale d'Odontologie, The Chemist and Druggist, The Therapist, The Ohio Dental Journal, The Pharmaceutical Journal, Revue Internationale de Médecine et de Chirurgie Pratiques, The Devon and Exeter Gazette, Items of Interest, The [so-called] Midwives' Registration Bill, Le Monde Dentaire, Skandinaviska Tandläkareföreningens Tidskrift, The British Journal of Dental Science, The Grimsby News, The Dental Record, The Dominion Dental Journal, The Dental Register, La Odontologia, Le Progres Dentaire, Revue Odontologique, The Dental Digest, Deutsche Monatsschrift für Zahnheilkunde, The Dental Review, The Transactions of the Odontological Society of Great Britain.

Letters and other Communications received from:—

Alverstone Gabell; F. Rose; J. M. Ackland; T. North; I. Renshaw; W. H. Goodman; T. R. Walkinshaw; Bosworth Harcourt; T. A. Goard; F. V. Richardson; H. F. Waterhouse; Jas. Petherbridge; T. Gaddes; J. Butterworth.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

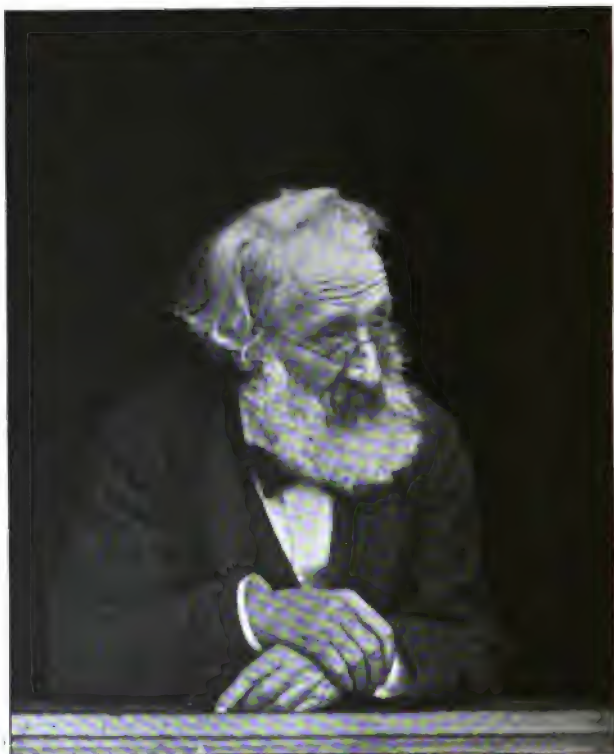
Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

CATALOGUED

E. H. S.



SIR JOHN TOMES, F.R.S.,
F.R.C.S., L.D.S. ENG

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 8.

AUGUST 15, 1895.

VOL. XVI.

Sir John Tomes.

“Philosopher contemning wealth and death,
But docile, child-like, full of life and love.”

WE but echo the feeling of every dentist worthy the name, when we say that a great calamity has befallen our profession, in the death of our revered leader, Sir John Tomes.

The memoir which we to-day publish, tells in all the adornment of loving simplicity the story of the life of one whose worth will be best estimated by those who can bring to its perusal an appreciation of all that is admirable and desirable in the character of a good and true man—a man who worked for the welfare of his adopted profession through many long years of difficulty and discouragement with silent but unflagging perseverance, and with a contempt for effect and a horror of ostentation which seemed almost to border on asceticism. In truth we may safely

say that every appearance in public of Sir John Tomes was made under the pressure of duty alone, at the expense of personal inclination, and under a feeling of diffidence and discomfort which even those who knew him best could but faintly realise. The valuable addresses from time to time delivered during the active period of dental reform and in connection with our Association, may all be taken as an expression of devotion to a self-imposed duty, discharged under much mental and sometimes physical suffering, carefully concealed without a murmur.

Tolerance of all opinions and a kind consideration for all persons and circumstances, combined with an unerring discrimination of character, were some of the distinguishing features of Sir John Tomes ; but however considerate he might desire to be towards individuals or their objects, the judicial character of his mind always guided him, and when the necessity of disagreeing with a friend arose he would not remain silent whatever sacrifice of feeling might be involved. As may be seen from our memoir, his object was always clear to his mind, and no amount of enthusiasm, and no short way, however tempting, would ever induce him to deviate from the straightest path of integrity in its pursuit ; and, however tolerant he might have been of the opinions or modes of others, he never allowed his toleration even to simulate participation in anything which had not his fullest approbation.

The history of his life is the history of our profession, and all his learning, all his scientific ability, and all his social influence were pressed into the service of its elevation. As his power and influence increased the prospects of our profession brightened, for he carried it along with him with unswerving devotion. He was never ashamed of it, even when at its lowest and worst, but believing in its beneficent utility and in its great capabilities his aim was to see those

qualities developed by educated men to the public advantage. How far he lived to see this object of his long life accomplished it is now for others to judge, but we know that if he had lived on he would have worked on, and at the commencement of his last illness he was engaged advocating the direct representation of dentists on the Medical Council.

We who follow him have yet to realise his absence ; for the present we can but mourn the loss of a kind and generous-hearted benefactor, and on behalf of the whole body of dentists at home and in our other homes across the Atlantic and in the southern seas, we gather up our tribute of sorrow, and with loving veneration lay it on the grave of our departed friend, and to his loved ones left behind offer our deepest heartfelt sympathy.

The Annual General Meeting.

THE arrangements for the Edinburgh Meeting are now nearly complete, and the programme, which we print on another page, although it may be subject to a few alterations, may be considered as practically correct. A glance at it will show that the list of papers is, if anything, a little above the average, and the Hon. Secretary of the Association intends to furnish in the book programme to be shortly issued a short *résumé* of each. Of the various papers, the one by Dr. Hewitt, on the advisability of administering chloroform in dental surgery, is sure to promote a lively and useful discussion, and it is to be hoped that some definite expression of opinion will be given upon this much vexed but very important question. The paper by Mr. C. Robbins will open up for discussion the subject of amalgam as a filling material, and will probably result

in a valuable discussion, which should add to our knowledge concerning the nature and practical application of this valuable agent. The demonstration list is a lengthy one, and this section of the programme will no doubt sustain the interest it always excites.

The Microscopical Section have a larger list of papers and demonstrations than in past years, and the discussion which was commenced last year, on the Pathology of the Pulp, is to be continued. The growth of this section is most encouraging, for microscopy must play an important part in any advances that may be made in the future with regard to our knowledge of the pathology of the teeth.

It is indeed difficult to prophesy, but certainly all augurs well for a most successful meeting.

ASSOCIATION INTELLIGENCE.

Annual General Meeting.

THE Annual General Meeting will be held in Edinburgh on August 28, 29, 30, and 31. Each member of the Association will shortly receive a book-programme giving full particulars, a card of membership as well as a complimentary ticket or tickets, and cards of invitation for the various Entertainments will await those who have signified their acceptances on the reply post-cards recently issued, or can be obtained upon presentation of cards of membership at the Secretary's office, which will be situated near the main entrance of the University Buildings.

A large number of replies have not yet been received, and it would considerably assist the Executive if those who have not replied would do so as soon as possible.

DAILY PROGRAMME.

Wednesday, August 28.

8.30 p.m.—Informal gathering. The members of the Scottish Branch will receive the members of the Association at the Waterloo Hotel.

9 p.m.—Smoking Concert. "The Edinburgh Harmonists." Highland Dancing by Jas. Lindsay, jun., Pipe Major MacDonald of the Edinburgh Dental Hospital. "Voluntaries."

Thursday, August 29.

9.30 a.m.—Meeting of the Representative Board in the Court Room of the University.

10.30.—The General Meeting, in the Celtic and History Lecture Hall.

BUSINESS.

Valedictory Address of Mr. C. S. Tomes.

Installation of Mr. W. Bowman Macleod, as President.

The President's Address.

The Treasurer's Report.

The Hon. Secretary's Report.

Report of the Representative Board as to time and President of the Annual General Meeting in 1896.

An Address by the President of the Microscopical Section, Mr. J. H. Mummery.

Fifth Report of the Schools Committee on the teeth of children in National Schools.

Consideration of the Resolution of the Scottish Branch *re* Alteration of Bye-Law XV.

The requisite written notice of motion (*viz.*, two months) has been given.

Bye-law XV., as it now stands, reads thus:—

"The Representative Board shall consist of the President, President-elect and Vice-Presidents of the Association, and of at least forty Members, including the President and Vice-President of the Board, the Treasurer, the Hon. Secretary, and the President and Hon. Secretary for the time being of each branch of the Association."

The proposed alteration is :—

“That the words, ‘*and the President, and the Hon. Secretary for the time being of each branch of the Association*’ be deleted from the Bye-law, and the following words substituted :—And two members from each branch of the Association, who shall be elected at the Annual Meeting of the branch they represent, and shall serve on the Board for the ensuing year, and shall be eligible for annual re-election.”

1 p.m.—Adjournment.

2 p.m.—Lecture Demonstrations on “Electricity in Dentistry,” by H. B. EZARD, L.D.S.Edin. and W. BRYSON, M.I.E.E., F.C.S., of Edinburgh. Mr. EZARD will read and Mr. BRYSON will demonstrate simultaneously.

N.B.—Mr. Ezard will be pleased to exhibit the installation running in his own house to any members who may desire to see it.

2.35 p.m.—PAPER.—“An Enquiry into the Safety and sphere of Applicability of Chloroform as an Anæsthetic in Dental Surgery,” by FREDK. HEWITT, M.A., M.D.Cantab., of London.

3.25 p.m.—A short Communication from Mr. R. P. LENNOX, of Cambridge, “On a Method of Obtaining a Plaster Model, as good as the Mouth, with a View to Crowning one or more of the Anterior Teeth.”

On Friday morning, the author and A. JONES, L.D.S.I., of Cambridge, will demonstrate the method described, by crowning a living but otherwise useless tooth, exhibiting the whole process from the beginning to the end.

3.35 p.m.—PAPER.—“What the Dentist can do for the State,” by G. CUNNINGHAM, M.A.Cantab., L.D.S.Eng., D.M.D.Harv., of Cambridge.

The Microscopical Section will hold its meeting in the Public Law Class Room during the afternoon.

4.15.—Adjournment.

4.30.—The Scottish Branch invites the members of the Association and ladies accompanying them to an excursion to view the Forth Bridge. The train leaves Waverley Station at 4.30 p.m., passes over the Bridge to North Queensferry. Members will alight there and proceed on board the Steamer, which will convey them across the Forth and under

the Bridge to South Queensferry. Train from there to Edinburgh.

N.B.—Members accepting the invitation are requested to apply for tickets at the Secretary's Office before 11 a.m. on Thursday.

8.30.—Official reception by the Lord Provost and Magistrates of Edinburgh at the City Chambers.

N.B.—Cards of invitation to members who have signified their intention of being present will await them at the Secretary's office.

Friday, August 30.

9.30 a.m.—Meeting of the subscribers and friends of the Dental Benevolent Fund in the Court Room of the University.

BUSINESS.—Report of Mr. J. Ackery, M.R.C.S., L.D.S.Eng., the Honorary Secretary of the Fund.

10.30 a.m.—Demonstrations in the Dental Hospital at Edinburgh.

LIST OF DEMONSTRATIONS.

At 10.30 a.m.

"(a) Gold Filling with the Electric Mallet; the Cavity will be prepared by means of the Suspension Engine driven by a new Reversible Electric Motor. (b) Mounting a Logan Crown," by LESLIE FRASER, L.D.S.Edin., Inverness.

"Crystal Mat Gold," by H. B. EZARD, L.D.S.Edin., Edinburgh.

"Root filling with Oxychloride of Zinc," by J. STIRLING, L.D.S.Eng., Ayr.

"Further Developments in Continuous Gum Work," by H. ROSE, L.D.S.Eng., London.

"Continuous Gum and Furnace," by J. H. GARTRELL, Penzance.

"Glass Inlays," by W. H. WILLIAMSON, M.D. and M.C. Aber., L.D.S.Edin., D.D.S.Phil., Aberdeen.

"Porcelain Inlay Cutting," by W. DALL, L.D.S.Glas., Glasgow.

"Seamless Crowns (method of making)," by I. RENSHAW, L.D.S.I., Rochdale.

"Richmond Crowns (simple method of making)," by VERNON KNOWLES, L.D.S.Eng., Reading.

"Newland-Pedley Crowns," by M. F. HOPSON, L.D.S.Eng., London.

Demonstration by R. P. LENNOX and A. JONES, L.D.S.I., of Cambridge, in continuation of the former's paper (*vide* Thursday).

"Mode of Flasking with Brasses," by A. WILSON, L.D.S. Edin., Edinburgh.

"Exhibition of specimens of mechanical work done by pupils at the Institute of Dental Technology, London," by the Principal.

At 12 p.m.

"Plaster Impressions with Special Trays," and

"Dental Extractions in the Extended Position," by G. BRUNTON, Leeds.

At 12.30 p.m.

A lantern demonstration, by W. DALL, L.D.S.Glas., Glasgow, on "Inlays, Ancient and Modern, Gum-coloured Inlays for Roots, and the Reparation of Fractured Teeth by Porcelain."

This Demonstration will be given in the Public Law Class Room of the University (the Microscopical Section Meeting Room), as the lantern is in position there.

1 p.m.—Adjournment.

2 p.m.—Paper on "Oral Hygiene," by W. HERN, M.R.C.S., L.D.S.Eng., of London.

Paper on "Amalgams in every day practice," by C. ROBBINS, L.D.S.Eng., of London.

Short communication on "Springs," by S. A. T. COXON, L.D.S.I., of Wisbech.

A short demonstration will be given after the paper.

"Cleft Palate Case," by J. A. BIGGS, L.D.S.Glas., of Glasgow. The method of construction will be described and the appliance shown in the patient's mouth.

Any adjourned business. Casual Communications.

The Microscopical Section meets for the reading and discussion of papers during the afternoon.

4.50 p.m.—Adjournment.

Short excursions to Holyrood Palace, Arthur's Seat, &c.

Notices of details of these excursions will be posted in the Secretary's office. Some members of the Scottish Branch have promised to undertake the personal supervision of the trips.

7.15 for 7.30 p.m.—The Annual Dinner of the Association will be held in the Grand Hall of the Waterloo Hotel.

N.B.—Tickets are to be obtained at the Secretary's office, price one guinea, including wine.

The Band of the Forth Division of the Royal Engineers will play during the dinner.

8 p.m. to 10 p.m.—Ladies' Reception. Mrs. Bowman Macleod will hold a Reception in the Victoria Hall of the Waterloo Hotel for ladies attending the Meeting.

Instrumental and vocal music, &c. Refreshments.

Saturday, August 31.

9 a.m. for 9.15 precisely.—Excursion to Loch Lomond by special train, and luncheon at Tarbet at the invitation of the Scottish Branch.

The train starts from Waverley Station, 9.15 a.m., arrives at Balloch about 11 a.m. Special steamer to Ardlui at the head of the Loch, and back to Tarbet.

After luncheon at Tarbet Hotel, the concluding Meeting of the Association will be held for the transaction of formal business, weather permitting, in the open air. The steamer will leave Tarbet Pier on return at 5 p.m.

The return train will arrive in Edinburgh at 8.15 p.m.

N.B.—Each member will be entitled to one extra ticket. Acceptances must be notified at the Secretary's office before 11 a.m., Friday. Should a member desire additional tickets he may obtain them at a charge of 7s. 6d. each.

THE MICROSCOPICAL SECTION.

The meetings of the section will be held in the Public Law Class Room of the University, on the afternoons of Thursday, August 29, and Friday, August 30. A varying exhibition of interesting dental microscopic specimens will be on view on Thursday and Friday, in the Natural History Laboratory.

Microscopical exhibits contributed by: Messrs. J. J. ANDREW, F. J. BENNETT, STORER BENNETT, DENCER WHITTLES, T. ROWNEY, J. STEWART, ANDREW WILSON, G. W. WATSON, C. S. TOMES, J. H. MUMMERY, the Hon. Sec., and others.

BUSINESS.—Opening Address by the PRESIDENT (Mr. J. H. Mummery).

Papers illustrated by the oxy-hydrogen lantern :—

"Two unusual Cases of Geminatlon," "A Radicular Odontome," by J. F. COLYER, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng., London.

"Dental Pathology and Physiology," by G. W. WATSON, L.D.S.Edin., Edinburgh.

"Some Dental Lesions induced by Caries," by the Hon. Sec.

DISCUSSION.—"PATHOLOGY OF THE DENTAL PULP."

DEMONSTRATIONS.

The PRESIDENT on "The Use of the Schanze Microtome."

Prof. HUNTER, M.D., C.M., F.R.C.S., F.R.C.P.Edin., on "A Simple Method of Photo-micrography."

Dr. G. MANN, M.B., C.M.Edin., will also demonstrate.

Microscope slides lent by Dr. Grevers (Amsterdam), and Dr. Zigisimondi (Vienna). The latter gentleman's slides will be on exhibition throughout the meeting.

The demonstrations will be given on Friday morning.

LOCAL ARRANGEMENTS COMMITTEE.

Local Hon. Sec. for Demonstrations :—H. B. EZARD, L.D.S.Edin., 23, Buccleuch Place, Edinburgh.

Local Hon. Sec. for Microscopical Section :—G. W. WATSON, L.D.S.Edin., 3, Walker Street, Edinburgh.

Local Hon. Sec. for Entertainments :—J. GRAHAM MUNRO, L.D.S.Edin., 16, George Square, Edinburgh.

N.B.—All communications and inquiries relative to the above sections should be addressed to their respective Hon. Secs.

The Hon. Secretary's Office will be in the Associate Societies' Hall of the University, near the main entrance. Mr. J. F. Pink, Secretary B.D.A., will be in charge. Tickets for the dinner, Entertainments and Excursions can be obtained at the Office. Letters and Telegrams for Members will be received.

All communications to the Hon. Secretary during the last week in August should be forwarded to this Office and not to London.

LADIES' COMMITTEE.—Mrs. Bowman Macleod, Mrs. Mac-

gregor, Mrs. Wilson, Mrs. Watson, Mrs. Durward, Mrs. Mackintosh, Mrs. Munro, Miss Macleod.

The Ladies' Committee will meet on Thursday and Friday, August 29 and 30, in the Associate Societies' Hall of the University at 10.30 a.m., to arrange small parties and to conduct them to various places of interest, *e.g.* :—

On Thursday: visit to Edinburgh Castle and St. Giles' Cathedral or Holyrood Palace in the morning, returning to the University at 1 p.m. After luncheon, a visit to the National Picture Gallery. The Committee will provide afternoon tea. Return to Waverley Station in time to join the Forth Bridge party at 4.30 p.m.

Friday at 10.30 a.m. : drive from the University round the Braid Hills and Craigmillar Castle, returning *via* The Queen's Drive to the University at 1 p.m. In the afternoon arrangements can be made to suit the general convenience of the ladies attending the meeting.

GENERAL INFORMATION.

A Reading and Writing room for the use of members will be provided in the Associate Societies' Hall of the University. A similar room will be provided in the Waterloo Hotel. Postal facilities will be afforded in both.

EXHIBITION OF DENTAL APPLIANCES.

The following firms will exhibit in the Examination Hall of the University :—Messrs. Ash & Sons ; The Dental Manufacturing Company ; Messrs. Elliott & Co., Edinburgh ; Messrs. Duncan, Flockhart & Co., Edinburgh ; Messrs. Bellis & Co., Edinburgh.

HOTELS.

The Waterloo Hotel (Social head-quarters of the British Dental Association).

N.B.—This hotel is full for the meeting. The special tariff arranged is 7s. 6d. single, and 14s. double, for bed, breakfast, and attendance.

The Balmoral Hotel, The Palace Hotel, Royal British Hotel, MacGregor's Hotel, in Princes Street, no special tariff made.

Temperance Hotels.—The Old Waverley Hotel (opposite the Waterloo Hotel), tariff 4s. 7d. bed, breakfast, and attendance. Darling's

Hotel (next door to the Waterloo Hotel), tariff 6s., 1st class. Cockburn's Hotel.

N.B.—These hotels are merely selected from the large number of Edinburgh hotels, with the idea of saving members trouble of looking them up.

CAB FARES.

Half mile for 2 persons, 6d. ; $1\frac{1}{2}$ mile for 2 persons, 1s. ; 1 mile for 4 persons, 1s. ; Every additional $\frac{1}{4}$ mile, 6d.

Half fare, returning, except the half mile drive. Shopping, 2s. per hour. Airing into the country, 3s. per hour. If more than 4 grown-up persons, 6d. extra for each. From midnight till 7 a.m., double fares. 100 lbs. luggage free, excess 6d.

TRAIN SERVICE NOTES.

Members from the south, travelling by the Great Northern Railway's East Coast Route will find reserved car arrangements (3rd class fares) made in connection with the 10 a.m. Scotch Express from King's Cross Station on Wednesday, August 28, which is due to arrive in Edinburgh at 6.20 p.m. On account of the congested state of Scotch traffic, usual at such a season, the Hon. Secretary will expect to hear from members desirous of so travelling at the earliest possible moment, in order to complete arrangements. Similar arrangements can be made for the return journey if members will mention their requirements in time, *e.g.*, before Friday, August 30, viz :

By 10.40 p.m. from Edinburgh, Saturday, August 31, arriving 8 a.m., King's Cross.

By 10.40 p.m. from Edinburgh, Sunday, September 1, arriving 8 a.m., King's Cross.

By 2.30 p.m. (dining car express), Monday, September 2, arriving 11.10 p.m., King's Cross, &c.

N.B.—The North British Railway during the meeting will grant return tickets at single fares to or from places within 50 miles of Edinburgh to members of the British Dental Association, on production of their membership cards. The tickets will be available for return on the day of issue, or the following day, or from Saturday to Monday.

BOAT SERVICE NOTES.

The London and Edinburgh Shipping Co.'s Steamers leave Hermitage Wharf, Wapping, London, for Leith, on Tuesday, Aug. 27, at 5 p.m., on Wednesday, Aug. 28, at 5 p.m., and return from Leith (Victoria Dock), on Saturday, Aug. 31, at 10 p.m. Single tickets, 1st cabin, 22s., return 34s. ; 2nd cabin, 16s. and 24s. 6d.

It is needless to specify the many places of interest in Edinburgh. Members will find guide-books (*gratis*) plentiful.

Additions to, or alterations of, this official programme will be duly announced and posted in the entrance hall of the University.

W. B. PATERSON,
Hon. Secretary.

Western Counties Branch.

FOR the first time the annual gathering of this branch has this year been held in North Devon, Barnstaple being the scene of the meeting, which took place on Friday, August 2, in the Guildhall. The chair was occupied by Mr. A. Kendrick (Taunton), the retiring President, and there were also present—Mr. J. J. H. Sanders (Barnstaple), the President-elect; Messrs. J. F. Browne-Mason (Exeter); R. Rogers (Cheltenham); J. H. Gartrell (Penzance); E. Brown (Barnstaple); T. Taylor Genge (Clifton); Edwin Goodman (Taunton); J. Law (Weymouth); G. Thomson (Torquay); W. J. Goodman (Exeter); E. R. Gray (Merthyr); J. P. Oliver (Penarth, Cardiff); T. Gill Williams (Newport); Harold E. Bullen (Truro); H. B. Mason (Exeter); A. D. Horne (Newton Abbot); E. L. Dudley (Bath); C. Schelling (London); H. Mallet (Plymouth); and T. A. Goard (Exeter) (Hon. Sec.)

The minutes of the last annual meeting, which was held at Taunton, having been read and confirmed, the death of Sir John Tomes was announced, whereupon Mr. BROWNE-MASON rose to move a resolution on the subject. He said his knowledge of Sir John Tomes dated from 1861, when he underwent his examination in dental surgery under him. Sir John was one of the most kindly-hearted of men, and he was always ready to help any student after he had finished his curriculum. Then Sir John had over and over again proved his devotion to the profession by numberless acts of kindness and sheer hard work. To him they owed the Dentists Act, and this alone, to his (the speaker's) knowledge, caused Sir John an immense amount of downright hard labour. He moved: "That the members of the Western Counties Branch of the British Dental Association have received with deep regret the announcement of the death of Sir John Tomes, and desire to place on record their admiration for, and appreciation of, the great and invaluable services he rendered to the advancement of the dental profession; and that the Hon. Secretary write expressing the deep sympathy of the branch with Lady Tomes and family in their great loss."

The PRESIDENT, in seconding, said that although as a younger member of the profession he had not had the opportunity of knowing Sir John Tomes so long as Mr. Browne-Mason, he knew, as the youngest could not but know, of Sir John's untiring and successful efforts as one of the pioneers of the movement which led to the passing of the Act by which they obtained their qualification to practise. Sir John Tomes devoted a great part of his long and useful life to the advancement of dental science, and his work would always be remembered with gratitude by the members of the profession. The motion was carried unanimously.

The HON. SECRETARY said letters expressing regret at inability to attend the meeting had been received from Messrs. C. Tomes, Hutchinson, Smith Turner, Ackery, Paterson, Woodruff, Betts, Hunt, Helyar, Oliver, Apperly, McAdam, Yates, Robertson, Mountford, W. R. Ackland, Graham White, Royal, Tuckett, and Faulkner.

The election of the following members was announced: J. P. Oliver (Cardiff); K. Foster Lane (Taunton); C. S. Prideaux (Dorset); and Hy. Mallet (Plymouth).

Mr. BROWNE-MASON, the Treasurer, presented his balance-sheet, which showed a balance in hand of £10 18s. 1½d.

The following Report of the Council was read by the Hon. Secretary:—

The Council have much pleasure in presenting their Report at the Council Meeting of members.

Last year the meeting was held at Taunton under the presidency of Mr. Kendrick. There was a good muster of members, who were most generously entertained by the President.

After a short valedictory speech from the retiring President, Mr. Kendrick, the President-elect gave an instructive address. Mr. W. A. Hunt read a paper on "Gleanings from Practice." Demonstrations were given by Messrs. Gartrell, Robertson, Blain, Prideaux, and Goodman.

In October an ordinary meeting of the Council was held at Torquay. The chief business of this meeting consisted in the consideration of cases of infringement of the Dental Act. It is hoped that in one case some practical result will soon be announced.

In April the spring meeting was held at Weymouth. Messrs. Dudley and Goodman were nominated on behalf of the Branch for election to the Representative Board at the meeting in Edinburgh.

On July 4 a special meeting of the Executive Committee, in accordance with Byelaw 19, was held at Exeter. It was resolved that the date of the Annual Meeting be altered from July 19 to August 2, in consequence of the General Election—especially as the polling day at Barnstaple would fall upon the former date. Last year four members resigned; the number now on the list is 86. The balance in hand according to Treasurer's report is £10 18s. 1½d. The Council propose

that the next annual meeting be held in Clifton, and they nominate Mr. T. Taylor Genge of that town as President-elect.

Colonel ROGERS moved the adoption of the Report, which he considered very satisfactory, and this was seconded by Mr. DUDLEY, and carried.

On the motion of Colonel ROGERS, and seconded by Mr. H. B. MASON, the following gentlemen were elected members of the Council—Messrs. W. E. Harding, W. Helyar, W. A. Hunt, G. C. McAdam, and John Laws.

In his valedictory speech the retiring PRESIDENT said it seemed but a very short time ago that he was thanking them for the honour they had done him in electing him as their President. But a year had slipped away, and before vacating the chair he should like to thank the Hon. Secretary and the members of the Council for the kind support they had given him, while he should also like to thank the members of the Association who had from time to time brought forward matters for discussion at the Council meetings, and thus made them profitable as well as pleasurable. It was by meeting together and discussing their individual experiences and successes—and, alas! failures—that they could hope to raise the profession to the position it was entitled to take; and the lines of progress in the future lay in the same way. It was his pleasant duty to introduce as his successor in the presidential chair, Mr. Sanders, who was well-known to them as a good and capable dental surgeon, and who has long taken a keen interest not only in this Branch, but in the Association as a whole.

Mr. Kendrick then vacated the chair, which was taken by Mr. Sanders.

Col. ROGERS moved a vote of thanks to Mr. Kendrick for the able and satisfactory manner in which he had filled the presidential chair during the past year.

The motion was seconded by Mr. TAYLOR GENGE, and cordially carried, Mr. KENDRICK briefly responding.

The PRESIDENT (Mr. J. J. H. Sanders) then delivered his address, which was as follows :—

GENTLEMEN,—I should commence my presidential duties badly if I did not at the earliest opportunity thank you most sincerely for the great compliment you have paid me by electing me as your President for the current year. Although I immensely appreciate the honour done me, it is with great diffidence that I enter upon the office, for I am keenly alive to the responsibility attaching to the position, while I cannot forget that I have been preceded by gentlemen whose character and ability have given peculiar dignity to the chair. Having received a unanimous invitation to become the President of the Branch, I felt it my duty to accept the office, and I can assure you that I will strive my utmost to merit the confidence you have so

generously reposed in me. I am sure that I shall not appeal in vain for the kindly consideration and co-operation of the members ; and I trust that at the end of my term of office you will be able to say that I have as your President maintained alike the dignity of the chair and the honour of the profession.

Allow me, gentlemen, to give you a most cordial welcome to Barnstaple. This is the first visit of our Association to North Devon—and I hope it will prove but the precursor of many. This is not the place for enlarging on the attractions and the charms of Barnstaple and its neighbourhood. Barumites are very proud of their ancient borough—which ranks among the oldest in the entire kingdom—and I may, perhaps, be excused for expressing the hope and belief that the members of this Association who now make acquaintance with the town for the first time will, after seeing for themselves, come to the conclusion that the pride which the people of Barnstaple take in their town is well founded. The borough has an honourable history. It has gained a high reputation as a go-ahead township. And I trust, gentlemen, that before you leave Barnstaple you will have an opportunity of deciding for yourselves as to this matter as far as trade is concerned, for you are invited to inspect the factories which represent the staple industries of the town. Upon the natural beauties of the district it is unnecessary for me to enlarge. They are too well known to need description. And I can fearlessly boast that, let the future meetings be held where they may, no more delightful surroundings, from the scenic point of view, can be found than are provided in connection with this visit to North Devon. With this pardonable panegyric—as I hope you will regard it—upon my native town, I will proceed to deal with the various professional subjects of which I desire to treat in my address.

I think we may well congratulate ourselves on the great advancement which has taken place in dentistry during the past twenty years. To the immense strides which have been made in the operative and mechanical departments of dentistry I intend to refer at a later stage. But the improvement noticeable in the status and prospects of the profession has been no less remarkable, and we owe a great debt of gratitude to those public-spirited men through whose foresight, persistence, and strategy was secured the passing of the Dental Act, which gave dentistry the recognition it deserved, and prepared the way for the upward progress which has since been consistently maintained. It is impossible to over-estimate the part which the organisation of the members of the profession has played in the advance which has been accomplished. It is pre-eminently a case in which unity is strength. And I mention this matter for the purpose of appealing to those duly-qualified dentists who have hitherto held aloof from the Association to join it at once. It is a grave reproach to the profession that of the 4,500 registered dentists only 800 odd are

members of the Association. The stronger the organisation becomes the better will it be for the profession. And the stronger the position of the profession becomes, the better will it be for its members. On the lowest ground, therefore, a large increase in the membership might be pleaded for. But every dentist worthy of the name owes it to his profession that he should do whatever he can to see that the rate of progress which has characterised the past twenty years is maintained; and unquestionably the best means of accomplishing this end is to extend the existing organisation until it embraces, and can speak on behalf of, the whole profession. To stand outside is to show indifference to the interests of the profession and to carry out the policy of selfish secrecy which was the leading feature of the old order—under which the man who knew anything took good care that he kept it to himself. This feeling has, I am happy to say, largely broken down—and for this we have primarily to thank our organisation. The members of the British Dental Association meet periodically for the purpose of considering dental politics, of comparing notes as to matters of experience and practice, of taking friendly counsel and exchanging equally friendly criticism; and the work thus done in unassuming fashion has been no small factor in the striking improvement in the social and professional status of dentistry which has taken place during the last two decades. Practitioners who decline to share in this excellent work and in the responsibility it involves, are—and I say it in all charity—false to themselves and to their profession. We must not be satisfied until every duly qualified dentist is included in the membership of the Association. As a fairly regular attendant at the meetings of the British Dental Association, I may, perhaps, be pardoned for drawing attention to the comparatively small number of members who attend these gatherings. Every member should make it a point of honour to attend if he can possibly do so, for the general reasons I have already alluded to; and I trust that the branch over which I now have the honour to preside may henceforward show a good example in this respect.

It is an easy step to the dental charlatan—the man who, doing business at a dental institute, dentorium, or any other place with a high-sounding name, imposes on the public and injures the legitimate practice of dentistry. To meet the evil which has grown up an amendment of the Dental Act is needed. The law should step in and protect the public and profession from these dental shams. It is grossly unfair to the duly qualified practitioner, who has attained his position after a long and expensive course of training, as well as to the public, that a bogus practitioner should be able to pursue his way almost with impunity. This is a practical grievance which demands prompt attention. Such an imposition is impossible in the professions of medicine and law. We may fairly demand that in this respect our profession may be put on the same footing. And the road to this act

of justice lies through organisation. Legislation has been the means of bringing the professions of the doctor and the dentist into close unity, while under its operation the profession of dentistry has attained a position in the esteem of the public of which its members may well be proud. And it is because I am confident that if we could put an end to the career of the charlatan the position of the profession would be still further improved and the confidence of the public made deeper and stronger, that I would give this question a prominent place in the dental plan of campaign to which the Representative Board should address itself with all the energy it can command. Even at the risk of incurring the criticism of some of my friends, I must add, as a parenthesis, that I think there is plenty of room for increased vigilance and activity on the part of the Committee.

I think, too, we should agitate with a view to securing dental representation on the General Medical Council. Gentlemen who have not made a speciality of the subject cannot be expected to appreciate all the varied intricacies of dentistry; and I think it is of the highest importance that there should be on the Medical Council gentlemen thoroughly conversant with dentistry and all its requirements. I believe that a determined and unanimous effort would have the desired result. There is another point on which I feel strongly to which I must refer. It is, to my mind, a distinct hardship that the cost of prosecuting offenders against the Dental Law should fall upon the eight hundred odd practitioners who have banded themselves together in the interests of the profession. Seeing that the General Medical Council has actually received contributions from every registered dentist, I think it may in all fairness be expected to bear the burden of protecting the profession and the public from the operations of unscrupulous persons who defy the law.

Then there is the difficulty which arises from the *laches* of duly qualified dentists—the professional black sheep. We are all familiar with the dodges to which some men holding the L.D.S. degree resort in order to build up a practice or make a living. The excuse always is that “one must live.” But the honour and the status of the profession must be maintained. And I would suggest that the plan which is adopted under the Dublin qualifications should be extended so as to embrace the whole of the United Kingdom. The man who qualifies at Dublin is compelled to take an affidavit to the effect that he will carry on his practice without any unprofessional means, such as advertising, &c., a breach of this undertaking involving the loss of the qualification. It is a reproach to the other examining bodies that they have allowed the Irish Board to alone take this line, and as it would afford a practical remedy for a decided grievance I think we should press for the general adoption of the system which has prevailed in Dublin since the passing of the Dental Act.

As it has an important bearing on the future of the profession, I

should like to say a few words on the question of dental education and training. There are, to my mind, great advantages—both educational and social—attaching to the system adopted at Guy's Hospital, where medical and dental students are trained under the same roof. The system has everything to commend it—it must tend to the development of mutual feelings of interest and respect—and I should much like to see it extended. This is another practical matter to which the Representative Board might profitably direct their attention. But the principle can be carried too far. I notice that in Spain and elsewhere the education of dental and medical students is being absolutely combined. On many grounds I consider this inadvisable, and I trust no steps in this direction will be taken in this country. Dentistry has almost endless possibilities. It affords ample scope for abilities of the highest order, and the intricacies of dental manipulation and the delicacies of mechanical work involved demand a degree of manual dexterity which must always necessitate the maintenance of the distinctive character of the profession. Dentistry is, in short, worthy of the best energies of a man—and it demands them. There is no other profession which requires the same combination of trained intelligence and finished manual dexterity. And it would be a waste of power and of time if a higher standard of medical training than is now provided for were demanded of the dental student. The average man is content if he can become an expert in *one* profession. And I see no reason why an exception should be made in the case of the dental student—for, be it remembered, the *per contra* case is never put, and the *dental* training of the medical student is generally more honoured in the breach than in the observance. Yet the medical practitioner is entitled to practise as a dentist. We may, I think, fairly ask for equality of treatment in regard to this matter. We can have no objection to medical gentlemen practising as dentists provided they duly qualify themselves. But we are surely entitled to demand that the possession of the requisite knowledge is not simply assumed as a matter of course.

While on this topic, I should like to make a few observations upon a question which has given rise to much controversy of late—I mean the duration of the period of training through which dental pupils go. My opinion is that after three years' training as it is given to-day the pupil is not qualified to take a situation as an assistant. He requires at least an extra year's careful training. And I am sure many gentlemen present will agree with me in thinking that the constant development of mechanical appliances, and the ever-increasing delicacy of work demanded, render the additional twelve months of training for which I am contending all the more necessary and important. It is, I know, the opinion of many that the old-fashioned bone carving has been of paramount advantage in promoting in the pupil a knowledge of dental anatomy and the delicacy of touch which is essential to the

best manipulative work. But I maintain that if the pupil is properly taught how to carve up a vulcanite plate he will obtain all the dexterity and delicacy required. As regards the training of the pupil in the setting up of teeth, I do not see that the old-fashioned carving could have much advantage, for I always prefer to take models of typical natural mouths and to keep them in front of the pupil when setting up the teeth. The old method of training is not adapted to the requirements of this age of pressure and "rush"; and I do not consider, for the reasons I have briefly stated, that the new method has lost anything in regard to efficiency and adaptability. But I think it absolutely necessary that there should be a longer period of training than is now customary. I would not for a moment think of advocating a return to the old system of seven years' pupilage; I strongly recommend, however, that four years' training should be the minimum demanded in the workroom, while I would suggest that the additional year should be devoted to all operative work which is connected with the mechanical—such as preparing the teeth and roots, taking impressions, selecting teeth, trying in the plates and fitting them in the mouths of patients.

I had meant to devote the chief part of my address to the revolution which has been wrought in dentistry by the changes which have been introduced within the period covered by my own experience. But the exigencies of time preclude the possibility of my carrying out my original intention. I will, however, deal briefly with one important section of the subject. Painless dentistry has always been the dream of the enthusiastic dentist—the dentist whose heart is *in* his work and *with* his patients—and it is not too much to say that although this great ideal may not have been actually reached, it has been closely approximated upon. And in the realisation of what was once regarded as the extravagant hope of fanatics the growth of knowledge of the capabilities of anæsthetics has, of course, played a vital part. It has been the custom of many practitioners to administer, or to have administered for them, chloroform for all long and difficult dental operations. And the custom still largely obtains. It is my experience that chloroform should not be used in any dental operation under any circumstances. This is, I am aware, the opinion of the minority, but I am quite prepared to substantiate the statement. I object to the use of chloroform because of the risk which attends it. Chloroform may be administered with success to the same person six times, and yet on being administered the seventh time under precisely the same circumstances it may prove fatal. This is not the case with other recognised anæsthetics. Possibly the known preference of medical practitioners for chloroform in dental cases may be accounted for by the fact that in their hospital training their practical acquaintance with the use of anæsthetics is confined chiefly to chloroform. In this matter I think the experience of surgeon-dentists should be allowed

to turn the scale, and to this end I should like the Dental Association to make an authoritative and definite recommendation on the point. If we as dentists closed our ranks on the subject, there would soon be uniformity of practice, with the result that a source of constant danger would be removed. Even at the risk of repeating myself, I should like to reiterate in the strongest possible manner my conviction that the less chloroform is used by dentists the better it will be for the public and the profession. For practical purposes, I may say, nitrous oxide meets all the requirements which have to be provided for by the practising dentist, and there is absolutely no comparison between it and chloroform when the safety of the patient is considered, whilst nitrous oxide is free from many minor disadvantages which must be debited against the other anæsthetic I have named. Whilst freely admitting that nitrous oxide and ether are much superior to chloroform, I must say that I have far greater faith in a mixture of nitrous oxide and oxygen (as suggested by Dr. F. W. Hewitt) than to any other anæsthetic. My reason is that it is a combination of the more natural gases, while as an anæsthetic the mixture is *absolutely safe*. There are not the great inconveniences attached to the mixture as are connected with the plain gas, while it takes a longer time to administer—a manifest advantage on which, in addressing a gathering of experts, I need not dilate. Then the mixture of nitrous oxide and oxygen is much pleasanter to take than the other anæsthetics, and there is none of the distension and feeling of suffocation on the part of the patient which are noticed when nitrous oxide is taken alone. It is the same when the patient is coming round—the advantage is on the side of the mixture. The slower process is, indeed, preferable on every ground, and, if I may presume to do so, I would strongly recommend my professional brethren to adopt it in their work—especially for young, old, and anæmic patients. For a country practitioner I have had a fair experience of this anæsthetic, which I have used successfully and to the satisfaction of medical practitioners almost from the time it was introduced, and this must be my excuse for venturing on a recommendation on the subject in my address.

I have only time to barely mention the wonderful strides that have been made, even in the past ten years, in the production of dental appliances and accessories. The fact that many improvements, especially in the preparation of chemicals, have of late emanated from Germany prompts (I may say in passing) the suggestion that we in England might do something more for the general preliminary and technical education of the dental student. But I may, perhaps without egotism—for I trust the improvement in workroom appliances to which I am about to refer will be found of general utility to the profession—venture, before closing my presidential address, to give a few details of a couple of ideas which have been suggested by my experience. Every practical dentist must at some time or another have had trouble

with his plaster stock. I think I may claim to have discovered a means of avoiding the most common difficulties. I keep my plaster in a wooden receptacle, hermetically sealed. The shape is immaterial, although the cylindrical form is preferable. At the top of the interior of the receptacle is suspended a basin containing chloride of calcium, the effect of which is to absorb all moisture and to keep the plaster always in a state fit to be worked. This enables the dentist to keep in stock and in good condition a larger quantity than would otherwise be possible—a double advantage to the country practitioner, for the saving on taking a large quantity of plaster is worth considering. At the bottom of the wooden receptacle there is a funnel (also in wood), and in this is fixed a pair of roughened rollers, which are made to revolve by a handle. As these rollers revolve they cause the plaster to flow in an evenly-distributed body into the basin placed below to receive it—the arrangement preventing the possibility of the plaster falling into the water in lumps or in bulk. I have found that the device greatly facilitates the work of preparation, while it entirely prevents the splitting which is so often the aggravating result of using rotten plaster.

The other idea which I have carried into effect in the workroom enables one to dispense altogether with the old style of bellows. I have, in short, devised a simple and inexpensive means of procuring a constant supply of air under pressure automatically. The principle is somewhat the same as is adopted in the case of the ordinary gasometer, the air being placed under pressure by the use of weights, and the re-filling process being effected by turning a valve and thus admitting a fresh supply of air. The air is conveyed to the work-bench in pipes, just like gas, and a supply is obtained at pleasure by turning on a tap. The advantages of this must be obvious to every practical dentist. Not only is a continuous and even air pressure obtained, but this result is secured without any exertion or movement on the part of the operator, who can thus devote his undivided attention and effort to the work he has in hand. I might say that a gasometer of the size of 22 inches diameter and a foot fall of holder will supply a Mellott's blow-pipe for $22\frac{1}{4}$ minutes. This equals a consumption of 2.62 cubic feet of air, or at the rate of one cubic foot for 8.4 minutes. The cost is small, and out of all proportion to the usefulness of the apparatus. I have ventured to give a description of these appliances in the hope that my ideas may be of service to my professional brethren; and I need hardly say that I shall be delighted to show any gentlemen present the apparatus in operation if he will do me the honour of visiting my workroom.

I am afraid, gentlemen, that I have already far exceeded the limit usually allotted to the presidential address. But although I must omit reference to several topics to which I desired to direct attention, I cannot conclude without again emphasising the desirability of

increasing the membership of our Association. In this way will the great movement which has already enabled dentistry to take an equal place, socially and scientifically, with the other learned professions, be completed. Each member of our profession can, too, aid the work in his private sphere. Let each have a lofty ideal and strive to reach it. Let each show in the most practical fashion that he despises shoddy work and materials as much as he condemns the charlatan and his methods. Let each ever keep the honour of the profession before him, and not be above taking pains in order that the best results may be obtained and the interests alike of suffering humanity and dentistry thereby advanced. So shall each member take his part in the upward progress of his profession, and prove a worthy successor of the honoured leaders who have borne the burden and heat of the day, and have by their public-spirited and self-denying efforts made further advance natural and easy.

I thank you sincerely, gentlemen, for the patient and kindly hearing you have given me, and trust that you will have nothing but pleasant memories of your visit to the Metropolis of North Devon.

Mr. GARTRELL moved a vote of thanks to the President for his admirable address, and this was seconded by Mr. GILL WILLIAMS, and carried with acclamation.

On the motion of Mr. KENDRICK, seconded by Mr. BROWNE-MASON, Messrs. Thomson and Yates were nominated as members of the Representative Board for 1896.

The Mayor and Corporation were, on the proposition of Mr. BROWNE-MASON, seconded by Mr. THOMSON, thanked for lending the Guildhall for the purposes of the meeting.

On the motion of Mr. DUDLEY, the Hon. Secretary and the Treasurer were cordially thanked for their services, Mr. BROWNE-MASON and Mr. GOARD responding, the latter observing that the work was a real enjoyment to him.

A paper on "The Advisability of Bridgework" was read by Mr. THOMSON.*

A discussion ensued in which the President, Messrs. Mallet, Browne-Mason, Kendrick, Gartrell and Genge took part.†

On the motion of Mr. GARTRELL, Mr. Thomson was thanked for his paper, and the proceedings then terminated.

The members were entertained at luncheon at the Royal and Fortescue Hotel by the President, the health of Mr. Sanders being drunk at the instance of Col. Rogers, and the afternoon was devoted to demonstrations at the residence of the President. Mr. J. H.

* To be published in a future issue.

† The substance of this will be published with the paper.

Gartrell demonstrated on "A Small Furnace for Porcelain Crowns and Bridges"; and Mr. G. Thomson on "Filling Overlapping Incisors with the Use of the Perry Separator." Mr. Sanders gave a demonstration on "The Use of Nitrous Oxide and Oxygen combined." In Mr. Sanders' chief operating room there was a display of novelties sent by Messrs. C. Ash and Sons, the Dental Manufacturing Company, and Messrs. Burroughs, Wellcome & Co.

In the evening the annual dinner was held at the Fortescue Hotel, Mr. Sanders presiding over a numerous gathering. The Chairman gave the customary loyal toast; Mr. Laws, "The Clergy and Ministers of other denominations," to which Dr. Newton and the Rev. J. Bendle responded; and Mr. W. A. Roberts, J.P., C.C., "The Army, Navy, and Reserve Forces," which General Chichester, J.P., and Col. Rogers acknowledged. "The British Dental Association" was proposed by Mr. G. C. Davis, J.P., C.C., and acknowledged by Mr. J. T. Browne-Mason and Mr. E. L. Dudley. Mr. W. Penhale, J.P., gave "The Medical Profession," Dr. Mark Jackson and Mr. T. Johnstone responding. Mr. A. Kendrick submitted "Prosperity to the Town of Barnstaple," Mr. J. Chapple (Deputy-Mayor), and Mr. J. Basson (Town Clerk) responding. "Our Guests" was given by Mr. G. Thomson, and responded to by Mr. C. H. Basset, J.P., and Dr. J. R. Harper. "The President" was proposed in eulogistic terms by Mr. Chichester (Hall), D.L., J.P.

On Saturday, August 3, the members had an excursion to Lynton and Lynmouth, and thoroughly enjoyed the trip in spite of the unpropitious weather.

ORIGINAL COMMUNICATIONS.

Replantation.*

By FRANK HARRISON, M.R.C.S., L.D.S., Sheffield.

IN introducing the subject of "Replantation" I propose to recite briefly the notes of five cases which have come under my notice, also to consider the subject more as an aid to treatment in traumatic lesions rather than as to its possibilities in prosthetic dentistry.

To the general as well as the dental physiologist and pathologist the subject teems with interest; it affects substantially the basis of both sciences, and the study of the

* Read at the Annual Meeting of the Midland Counties Branch held at Hull, June 21, 1895.

history of replantation shows one the remarkable evolution of these sciences. But such interesting bye-ways are denied the busy practitioner and the essayist, who are endeavouring to learn a lesson from observations of cases in practice and to reduce, if possible, the facts and experiences thus gained to a rationale of procedure. The first deduction (?) which I must make is that all the cases which I have to relate refer to lesions in the incisor teeth of the superior maxilla, and are all of traumatic origin. The methods and results with regard to treatment are not so easily reduced and will have to be considered more fully.

After my commencing practice, the first case of replantation which came under my notice was one which had been treated by a country doctor and in more or less a primitive manner.

The facts are as follows:—Two young men were making an experimental ride on what is known as a tandem tricycle. They had started from Sheffield and toiled up the inevitable hills which must be mounted after leaving the city of smoke before an enjoyable "coast" can be indulged in.

The patient was seated on the front seat of the machine, and had command of the steering, while the individual who occupied the seat in the rear controlled the brake.

Having got over the brow of the hill the machine began to gather considerable speed, which alarmed the brake man—so much so that, without any warning to his friend in front he suddenly applied the brake, which skidded the machine so effectually that it pitched the patient violently forward upon the face, at the same time knocking out the superior incisor teeth. After some little delay the dislocated organs were sought for and found, and a leech in the vicinity was visited, who replaced the teeth.

Unfortunately for the patient the doctor had not previously studied the individual characteristics of the teeth and he replanted them most probably in the order in which they were given to him and told the patient to keep his jaws firmly fixed together. The patient existed for three weeks and then came to me, he was in abject misery, and one of the most grotesque make-ups I have ever seen. The right central was in the position of the left and very loose, and topsy-turvydom reigned supreme. The patient, although some of the teeth were moderately firm, was relieved when I suggested their extraction.

Had more care been exercised and a splint applied to the teeth, a very much better result might have been anticipated. The case which I will next refer to may serve to explain this and also give food for thought to those who are interested in the study of the physiology of healing.

Mrs. S., aged 25. When 10 years old fell from a hammock and knocked out the left upper central incisor. A doctor was immediately sent for, who replaced the dislocated tooth and told the patient to keep pushing it up into its place. The tooth when I saw it was fully a tooth's breadth in front of the normal arch. The crown was not too long, but the organ was slightly loose, and had a small carious point on its mesial aspect. For æsthetic reasons, both the patient and myself preferred that the tooth should be removed. Upon examination after removal the general aspect was that of a live tooth. The colour was normal both of enamel and dentine. *The root* was shorter than normal, due to absorption; its anterior surface was completely denuded of periosteum and covered with tartar. Its posterior surface and apex were on the other hand covered with perfectly healthy periosteum. Upon fracture of the tooth in order to examine the contents of the pulp canal, I was very much surprised to find a perfectly normal healthy pulp.

In cases where the tooth is living and immediately replaced, a re-establishment of the pulp is sometimes produced. Magitot, who has recorded a large number of cases of re-plantation, maintains that for the success, there must be a complete ring of healthy membrane on the tooth, and I should add to this that the alveolus should also not be very much fractured.

The third case was one which was treated somewhat after the manner of the two preceding ones, and the result is on the whole as satisfactory.

Ten years ago, a young lady in alighting from the back of a dog cart, caught her dress in a chain, which caused her to fall forward, face downwards, upon some granite; the force was such as to drive the two superior central incisors into the gum, shortening them by about $\frac{1}{8}$ of an inch. The left upper lateral incisor was apparently broken off just under the gum. Upon closer examination, I was surprised to find what I at first thought to be the fractured lateral was in fact the slightly fractured morsel surface of the buried lateral.

I must mention that I did not see the case until three days after the accident. I was able then to pull into place by means of forceps, the central incisors, but the lateral incisor was not so easily managed, and in my attempts which I wished to cease at traction ended in extraction. The tooth slipped out of the grasp of my forceps and was for some moments lost upon the floor. Upon recovering it I washed it carefully in a weak solution of carbolic, and replaced the tooth without further treatment. I saw the case about a year ago, the central incisors were healthy, alive, and in good position; the lateral was dead, slightly prominent, and elongated, but firm and strong and not unsightly. I should mention that for some years this patient has suffered from very severe attacks of anæmia.

Some time after the treatment of this case, I had the pleasure of visiting America, and at Boston I witnessed Dr. Curtis of Syracuse perform an operation of replantation, and with some little modification I have adopted his method of treatment, which I am now going to describe.

In June, 1889, E. W., a boy aged 8 years, was brought to me having accidentally knocked out his two upper central incisors. The boy had been playing in a garden where a gardener was at work cutting grass. The cut grass had been placed in a wheel-barrow, and the boy had mounted the barrow only to fall out, with his front teeth coming in contact with the wheel. Both teeth were completely dislocated. They were sought for and brought by the mother to me, along with the patient; the little fellow was very neurotic, and was terribly distressed at the prospect of treatment. However, I sent him away for a week, and placed the teeth in a ten per cent. solution of carbolic acid for two days, then changed the solution and allowed them to stay another two days, after which I cut off the eighth of an inch from the apex of each tooth, removed the pulp, washed out its cavity with carbolic, and filled without drying with Hill's gutta-percha; all the time carefully protecting the pericementum with a serviette saturated with weak carbolic. I then replaced them in a fresh solution of antiseptic fluid until the operation of replantation. The day before replacing the teeth, I took an impression of the upper jaw and fitted a light Hammond splint to the model. This I used to hold the teeth in position

by means of a twist of thin iron wire, in the manner which is familiar to you all as described by Hammond.

Here I may say that, although in this case the holding of the teeth by means of iron wire placed around the neck of the teeth did no harm, yet it is a method which I should not adopt again, and I think is very nearly as objectionable as the still older method of passing silk ligatures around the neck of teeth to be implanted.

In the case which I shall next refer to, I adopted another method of splint which acted with good results, and consisted of a dental alloy frame made in the following manner: An impression was taken of the mouth and cast in plaster. Two holes were scooped out of the plaster to represent the sockets of the teeth to be replaced. The teeth themselves were wrapped up in tinfoil and waxed in position, that is, a little shorter than required and a zinc replica made. A dental alloy frame was then struck up, fitting around the necks of the molars and bicuspidis on each side of the mouth, and coming over the cutting edge of the incisors to the extent of about one-eighth of an inch. This when applied to the mouth formed a very good splint, and was held in by wires passed around the necks of the molars, much after the style of the Hammond twist. This splint has objections, the principal one being the difficulty of keeping clean. While speaking about splints, I think in future I shall make a modified Hammond in gold or dental alloy, and solder hook-like processes to come down from the posterior bar which will give all the support necessary to the teeth, and will ensure greater cleanliness and give a very much better view of the teeth under treatment.

The boy, the day after the application of the wire splint and replantation, went for a holiday to the sea-side and I did not see him for three weeks. After that time he seemed much better in health, the teeth were looking well and the gums healthy, he kept the splint on for another three weeks, when I removed it, the teeth appearing in every way satisfactory, and so they continued for three years, when the boy had another accident. He and his brother were playing together in bed, when the patient received a blow from his brothers' knee which partly dislocated the right upper replanted tooth. I adjusted quite a small Hammond, without taking a model, and supported the tooth in its old position

with a wire twist. I saw the patient a few months ago, when the teeth appeared perfectly healthy. The alveolar dental membrane was apparently quite reproduced (?) down to its normal position, six years after the accident.

I advocate the removal of a portion of the apex of the root because I imagine that the alveolus in healing, will, as all other cavities do, heal by granulating from the bottom, and in that case especially as the teeth have been allowed to remain out of their sockets for some time, we must expect that at the bottom of the crypt there will be the most resistance to the introduction of the replanted tooth, and this must necessarily be allowed for, or otherwise when re-instated will have a tendency to be pushed out by the elasticity of the granulations, and so make the tooth appear when fixed to be longer than desired. The slight contraction of the side, as well as the base of the alveolus, form an ideal splint, and I feel that I should not have much hesitation in treating a case without what one might term a secondary splint, especially if there has been a simple dislocation of the tooth, and no great fracture of the alveolar wall. I shall conclude by reading the notes of the last case without comment.

October 9, 1894.—Patient, a girl aged 15, was taking gymnastic exercise on the horizontal bar; the patient pulled herself up to, and was spinning round the bar; she turned giddy and fell. The fall did not hurt her, but she was aware something had gone wrong with her mouth. One of her playmates found the R U F upon the floor.

The patient was removed to her room when she found the L U F loose and coming out. She was brought to me about half-an-hour after the accident, when I found not only the two front dislocated, but the R U L fractured; only the root from the neck remaining. There was also a lacerated wound under the chin, which I ligatured with catgut and dressed with carbolic. The subsequent treatment I have already described with the alloy plate splint, on October 17. The R U F was difficult to re-introduce owing to a considerable fracture of the alveolus. The splint was removed in two weeks' time and a pin plate crown fixed to the R U L.

Nine months after the replantation the teeth are doing well. The crowned tooth has become somewhat elongated.

OBITUARY.

Sir John Tomes, F.R.S., F.R.C.S., L.D.S.Eng.

SIR JOHN TOMES was born on March 21, 1815, at Weston-on-Avon, Gloucestershire. The Tomes family had lived at Marston Sicca, in the same county since the reign of Richard II., and in the same house, which had acquired the name of "King Charles' House," from its having sheltered Charles II. after the battle of Worcester, whence he was assisted to escape by Mrs. Lane, a kinswoman of the John Tomes of that period, and was brought by her to sleep at Marston Sicca on his flight. (See "Boscobel Tracts"; and also Pepys' account of Charles' flight, taken down in cipher from the king's dictation; the original being in the Library of Magdalene College, Cambridge, with the famous "Diary.") Sir John's father was born at Marston Sicca; but the entail having been cut off he did not inherit the property, and went to live at Weston-on-Avon, where Sir John was born. Sir John's father was a man of marked ability and artistic talent, an omnivorous reader, especially of metaphysical works; but, perhaps, somewhat deficient in business capacity. The entail being cut off, he did not, although the eldest son, inherit the property, and he was not in a position to do more than educate his sons, so that Sir John was wholly dependent upon his own exertions after his student days. It was always a source of great regret that the old house had passed out of the direct line. Although no member of the family had ever been medical, yet Mr. John Tomes was destined for that profession, and in 1831 he was articled to a practitioner at Evesham, of the hard drinking, hard riding type. In 1836 he entered the Medical Schools of King's College (where he had William—afterwards Sir William—Bowman as a fellow student), and Middlesex Hospitals. He was House Surgeon at the latter for two years and passed the first examination for the M.B. at the University of London in 1839. He was Dental Surgeon to King's College Hospital for some years and resigned that post for the same one at Middlesex Hospital. During his House Surgeonship at Middlesex he invented forceps adapted to the necks of the different teeth, which caused Sir Thomas Wat-

son and Mr. Arnott to advise him to adopt Dental Surgery as his profession. In 1840 he commenced practice at 41, Mortimer Street (now Cavendish Place), and for some years—even after his marriage in 1844—he had a hard struggle to make both ends meet. In 1845 he invented a machine for copying in ivory irregular curved surfaces, which obtained the gold medal of the Society of Arts. In 1845 he also delivered the course of lectures at Middlesex which marked a new era in dentistry, and when published in the *Medical Gazette*, and afterwards, in 1848, in book form, at once made his reputation as a scientific observer. In relation to these lectures there is a note in his diary, "I am resolved never to deliver any more lectures unless I have a class of six." In 1846 Dr. Morton, a dentist at Boston, U.S.A., applied ether as an anæsthetic. Mr. Tomes at once took it up, and after using sulphuric and sometimes chloric ether in the out-patients' room for dental operations, we find in his diary the following entries: "January 14, 1847, gave ether to Arnott's case of lithotomy, eight minutes and insensibility came, the operation was then commenced and lasted twelve minutes." In the ensuing weeks he gave ether many times with varying success and on February 23: "Gave ether to eight patients for operations, with great success; Earl of Cadogan (a Governor of the Hospital) and many others present."

In 1843 he joined a few of the leading dentists of that time in memorialising the College of Surgeons to recognise the claims of dentistry to be considered a department of general surgery. But neither medical nor public opinion was yet ripe for such a step, and the attempt failed. After one of the meetings, held at the house of Mr. Arnold Rogers, Mr. Cartwright—then in the zenith of his fame—remarked of Mr. Tomes: "That young man will be heard of again, you will see." Mr. Tomes never lost sight of the unsuccessful scheme, and held many long evening conversations with Mr. Arnold Rogers about dental reform, and when, in 1855, the profession was strongly agitated by the evident necessity for special education and qualification of some kind, he took the lead in forming an association, with the object of carrying out the former scheme in accordance with a suggestion from Mr. Belfour, the Secretary of the College of Surgeons, that there should be a responsible organisation of dentists with whom

the college could deal. This association, which included several of the members of the previous one of 1843, was the germ of the Odontological Society (so christened by Sir Edwin—then Mr.—Saunders, in 1856). After long protracted discussions between those who advocated union with the College of Surgeons, and those who preferred an independent College of Dentists, the former, represented by the Odontological Society, ultimately prevailed, having been strongly supported at the council of the College of Surgeons by Mr. Lawrence, Mr. Green, and above all by Mr. Arnott, three of the most influential members of that body. The Society engaged to organise a dental hospital and school, with a curriculum of education satisfactory to the Council of the College of Surgeons, and in 1859 a Royal Charter was obtained instituting a department of Dental Surgery at the College. These results were almost entirely due to the energy, the patience, and the unceasing efforts of Mr. Tomes. He brought together those who were willing to work, he convinced the doubters, encouraged friends and conciliated opponents; and on March 13, 1860, after five years of incessant labour, giving up his time, sacrificing his practice and his health—always delicate—he had the gratification of seeing the first fruits of his efforts in the appearance at the College of Surgeons of a large number of dentists, who submitted to examination and received a legal qualification to practise; he himself being one of the examiners, the others being, on the surgical side, Mr. Lawrence, Mr. Green and Mr. Arnott, and on the dental side, Mr. Arnold Rogers and Mr. Bell.

On June 6, 1850, he had received the Fellowship of the Royal Society, as being "distinguished for his acquaintance with the sciences of anatomy and physiology." The late Professor Joule was elected on the same day.

Meanwhile he had been engaged in writing his "System of Dental Surgery," which was published in 1859, and is still, having undergone successive revisions by Mr. Charles Tomes, the standard work on the subject.

A strong feeling had naturally arisen that Mr. Tomes' great services merited some public token of the gratitude of the profession, and on July 16, 1862, a silver centre piece and tea and coffee service were presented to him "by several of

his brother practitioners in acknowledgment of the many valuable services he has rendered to his profession."

But much yet remained to be done. The examination for the Dental Diploma was purely voluntary. Anyone could still practise without submitting to it. The educational scheme could be made compulsory only by making the Diploma registrable, as is the case with the full Surgical Diploma. In his address on the occasion of his election for the second time to the Presidentship of the Odontological Society, Mr. Tomes said "the power to obtain a Charter being" (in 1859) "granted, all difficulty seemed at an end, the way seemed quite clear. But it was not so, for on the the College of Surgeons making application to the Crown" (for registration of Dental Licentiates) "the subject was referred by the government authorities to the Medical Council. That body, without the power or perhaps the will to negative the Charter, insisted upon the introduction of a clause denying our right to register under the Medical Acts. We insisted upon the justice of a registration of those who had passed a recognised examination as Licentiates in Dental Surgery, separated from and in no way interfering with the registration of the Medical practitioner. But we failed to convince the Medical Council, and the Charter was wisely accepted by the College of Surgeons, giving us nine-tenths of what we required and leaving the right to registration to be gained on some future opportunity. Had we gained more perhaps our real gain would have been less, for the need of further exertion has been and still continues to be a bond of union, and a preventive against the apathy which often succeeds energy after a great purpose has been gained. To guard against such a contingency, a committee was appointed and still exists, whose duty consists in watching any Acts of the Legislature likely to affect the dental surgeon for ill or good, and endowed with power to act in case action should seem desirable; and such action has been taken more than once when pending Bills offered a chance of registration."

In 1870, Mr. Charles James Fox began in the *British Journal of Dental Science* to urge strongly the taking immediate steps to obtain registration and compulsory education. Several meetings were held and there was a lengthy correspondence on the subject. In 1875 a great meeting was called at Manchester,

over which Mr. Fox was specially asked to preside, and at which he was authorised to take steps for the formation of a Dental Reform Committee. It was, perhaps, not unnatural that many dentists should think that little progress had been made since 1859, or that even if a few had benefited by legislation, the great mass of the profession did not seem to have derived much advantage. It seemed, indeed, at this time, almost as though the whole subject of dental education were about to be re-opened. Some were for renouncing the College of Surgeons and resuscitating the College of Dentists. Others went to the opposite extreme and maintained that whatever the Dental Diploma of the College of Surgeons might be worth it ought not to confer the right of teaching dental subjects at hospitals and schools. Only those who had taken a very active part in the previous movements knew what difficulties lay in the way of progress, and what care was necessary in approaching those whose co-operation must be obtained before any great step in advance could be taken. And with the Legislature lay, of course, the ultimate decision, and members of that body sometimes held peculiar doctrines on the subject of "privileges" and "class-legislation," and even of "free trade" in medical as in other callings. In such a stormy time it needed a strong, cool, clear-headed leader at the head of the dental movement, and happily for the fortunes of the profession, it possessed such a leader in Mr. Tomes. He had all the experience of the previous movements, he knew exactly how far to advance and when it was advisable to yield, he was more or less intimately acquainted with most of those at the College of Surgeons or in the Medical Council or in the Legislature by whom these questions would be finally decided, and he possessed the absolute and unlimited trust and confidence of his supporters, and the respect and regard of even his opponents. His health had, however, suffered from his many labours, and he had retired from practice and from London, and he resided in a house which he had built for himself in 1868 at Caterham. But he was prepared, as he ever had been, to make every possible sacrifice, and we find him still constantly writing, and speaking in public.

In 1875 he was chosen for the second time President of the Odontological Society, although he could only occasionally

attend its meetings. In 1877 he was elected Chairman of the Dental Reform Committee, and in October of that year he presided over a conference at Edinburgh, summoned to consider "the future position of the dental profession, in regard to the means of education in the event of the present registration movement being successful." His speech on that occasion was as follows :—

GENTLEMEN,—It is with great hesitation and fear that I accept the responsible office of Chairman to this very important meeting. I fear that in honouring a guest you may have injured the great cause for the furtherance of which we have this day met, for there are those present who could have stated more clearly and forcibly the facts which should guide us in determining what should be the matter, the manner, and the extent of the education of the dental surgeon of the future in Scotland, and to some extent in England too, for the two nations are as one in all that concerns educational progress. Upon the wisdom or the want of wisdom of the resolutions which this meeting adopts will greatly depend the competency, and even the comfort and status of our successors—our professional children, for a mastery of the subject we profess is necessary to self-respect, without which we shall feel otherwise than proud of our calling, and seek social position from attainments which have but a partial bearing upon, or are altogether extraneous, to the business of our lives. The education of the young must at all times be determined by their seniors, and obedience must be insisted on. The parent, or he who represents him, must govern the education of the child. The seniors of our profession must govern the education of its youth, and the responsibility which the members of this conference accepts in determining what that professional education should be in their opinion is a heavy one. Fortunately, we need not enter upon the question without the aid of experience, furnished by this and other countries. In London, at the commencement of the century, there were not, I believe, a dozen dentists, now there are about 500. In Edinburgh there were not four, now there are over forty ; and in the provincial towns they had no existence. Now there are in Great Britain nearly 2,000, without counting those in Ireland. Until within the last twenty years dental practice was approached from two distinct and very different points, and the difference of approach led to differences in professional character and feeling, which, up to the present time, have been a barrier to the attainment of that completeness of professional education which it should be the business of this generation to bring about. From the one side came the qualified surgeon, who had yet to gain technical skill, and this he trusted to acquire by the experience afforded by the treatment of patients or from private instruction. At

the hospitals nothing could be seen but mere rude tooth-drawing, so that his proficiency in the art, which was to form the business of his life, depended on unusual personal aptitude, or on great luck in the selection of a teacher. From the other side came practitioners who had entered upon special training as articled pupils in their youth, serving with established dentists from their schooldays up to the age of 21 years. From five to seven years had been devoted to special training, but they had received no systematic surgical education. If they were real dentists they were but amateur surgeons. Still, it cannot be denied that they more than held their own against those whose surgical education was complete before they thought of dental practice. From another source persons entered upon dental practice. They were of the artisan class, with but little general education, and knew only how to make artificial teeth. Bright exceptions are to be found in those who as boys were employed as dental artisans, but who, as men, educated themselves out of their earnings, and in some instances did not stop short until they had become qualified surgeons. The dentist with a surgical qualification regarded the dentist who had received only a special education as his inferior, and often declined to act with him on terms of equality; while the latter declared that the former was unskilful as a dentist whatever he might be as a surgeon, and pointed to the numerical superiority of the technical dentists, and to their more than equal success in practice in proof of the assertion. This wretched state of antagonism and false pride was a sad hindrance to any unity of purpose in amending professional education. They were both dentists after all, and the public cared little about diplomas so long as efficient assistance was forthcoming at the time of need. Both were perfectly educated. The one wanted surgical and the other technical training. It required the fusion of the two to make a really competent practitioner. The one knew the grammar of dental surgery, but could not apply it; the other had learned how to practice, but knew not the surgical laws by which the practice should be governed. The two would not work in the same team to draw the profession out of its educational difficulty. The Americans were, I think, the first to recognise the fact that private training for the dentist was, at best, uncertain in its results and mischievous in its general effects—leading to secrecy in methods of practice, to personal jealousy and illiberality of feeling amongst practitioners. About thirty years ago dental schools were formed in some of the large American cities, and diplomas of fitness to practise given after examination. The highly practical turn of the American people showed itself in their dental schools. They were made independent of the medical schools, and although they were worked with great energy and produced a large body of highly skilled practitioners, they failed somewhat in the strictly surgical training. They did service, but not all the service required. This fault has been recog-

nised, and the dental department of the Harvard University, enjoining a combined surgical and special training, issues the most valued dental diploma of the United States, and the improvement is extending to the American dental colleges.

The advantages secured to the American student by properly organised schools devoted to special training was fully recognised, and the disadvantage of insufficient surgical knowledge was not overlooked. Under the guidance of the experience gained by our transatlantic friends, the dental curriculum of the College of Surgeons of England was framed. To accept the strong points and to strengthen the weak points of the American system of culture in dental schools was the aim of those who took part in determining the details, and I think it will be fully admitted that the education fully carried out produces in the licentiate in dental surgery a very competent practitioner. I do not for a moment suppose that our system of education is perfect or incapable of improvement in its details. It would be strange, indeed, if an institution not yet, in the language of the law, of age, were perfect. But it is by far the best thing yet done, and, I think, that if the examination of candidates were in part practical it would, for the present, need no material changes. It must not be forgotten that in our survey that the great advances which dental surgery has made here and in America have been made in two countries where any person whatever, whether educated or wholly uneducated, can proclaim himself to be and proceed to practise as a dentist. A man may not call himself a doctor of medicine unless he is duly qualified and his qualifications registered, but any person may call himself a tooth doctor, dentist, or surgeon-dentist, without incurring a penalty. On the Continent we see a different state of things. In Germany, Austria, Belgium, and in some other countries, a medical diploma is required of the dentist, but the need of special training is not recognised. No dental schools exist, and dental surgery is there at a very low ebb. I do not quite know the regulations in France, but the subject of dental surgery is not taught at special schools, and if report speaks rightly the American practitioner in Paris is taking the place of the French dentist, I suppose, on the principle that the fittest survives the less fit.

It may be broadly stated that in those countries where a medical qualification is insisted on as a sole condition for the dentist, dental surgery does not prosper. The reason, I think, lies close at hand. The period of youth is wholly occupied in medical studies, and the special studies were delayed to a time when the mind may be more trained, but when the untrained fingers are much less obedient to the will. When great manipulative skill is required, the training must commence in youth, for if delayed it comes with great difficulty or comes not at all. This fact is seldom sufficiently kept in mind, here or elsewhere. The time will not be wasted if we inquire a little more

closely into what constitutes a sufficient technical education, and what should be its relation to surgical study, for the question forms the heart of the subject which we have met to discuss. Two years have been considered as the minimum of time in which the student with good teaching, in the midst of fellow students, who are in various stages of proficiency, and with close application on his own part, can acquire the needful amount of skill, can reduce his hands to that unconscious obedience to his will without which his life will or ought to be a failure. It has been said the operations of the dentist are merely mechanical work, and they are so in the same sense as are surgical operations, all works of art, whether of the sculptor or artist, and they are as varied as are the works of either; for they are varied with every patient, and are as difficult as either if rightly done. My own experience as a teacher is, that the student at the end of the first year seems to have made but little way, but by the end of the second he has learned what to attempt, and how to accomplish the end he proposes, his hands are becoming automatically obedient to his will. Now I believe that this progress is not attainable in two years unless the student is surrounded with fellow-workers, to whom he can constantly refer, and whose manner of working he can frequently witness. It must not be supposed that I attach a greater value to technical skill than to surgical knowledge. In my mind they are of equal value, and he who possesses only the one is but half a dentist. When the dental curriculum was framed it was sought to establish an education equal in degree, but somewhat different in kind to that required of the surgeon—the M.R.C.S. Those special subjects of the general surgical training which could be of but little value to the dentist were replaced by those which were essential to his competence as a practitioner, and the only ground upon which a difference of professional status could be maintained, was the exemption from a preliminary examination in arts of the dental student. But this distinction no longer exists. From this month henceforward the pupil before he can register his attendance at hospital or school must have passed the examination in arts required by the College of Surgeons of both surgical and dental students. If the purposes of the curriculum have not been fully carried out the fault does not lie in the dental training, for which alone the dentists are responsible. The surgical training was entrusted to the medical schools and hospitals and to the surgical section of the Dental Board of Examiners, the whole period of professional education being four years for the licentiate and for the member of the College of Surgeons. If candidates have presented themselves less well prepared in respect to surgical accomplishments than was contemplated as an ultimate result of the curriculum, it must be remembered that the powers of the colleges are for the present permissive only, that the candidates present themselves for examination of their own free will, and that judicious leniency on the part of the surgical

examiner, while the qualification is in its infancy tends to encourage dental education. But such leniency is quite unneeded, and indeed would be baneful on the part of the dental section of the Board of Examiners. By some it has been urged that both the membership and licentiate should be taken by the dentist. This would impose on the dentists an education longer in time and greater in cost by one-third than that required of the surgeon, and would, in fact, impose conditions which few students could meet. The idea that within the prescribed four years of study both the membership and the licentiate-ship can be obtained is sufficiently answered by the fact that over a third of the candidates for the membership are rejected. It is obvious that the four years, if not too short a time for medical study, is, at all events, very fully occupied by the most talented and industrious, and for the less gifted student it is obviously too short. In neither case can the two years required for dental studies be given otherwise than by addition to the four, and for reasons already given the special training should not be delayed till the medical education is completed. The need of the membership in the estimation of those who need help in their practice is expressed in their selection of assistants or successors. The practitioner, whether he be a member of the College of Surgeons or not, requires from the most skilful pupil the licentiate-ship, but the membership of the college is not allowed to weigh against superior skill in the selection. To the student, in whose interest these meetings are for the most part held, I would say, at the outset make up your mind whether you will be a surgeon or a dentist or dental surgeon, and whichever you select make yourself thorough master of it before you think of any other qualification. Having first secured proficiency in the business of your life—if that be dentistry—then if your means will allow it, and not till then, take the membership, or, better still, the fellowship of your college; and whether you obtain a second qualification or not keep yourself well acquainted with all that goes on in the great world of science; for that in these times of great educational opportunity is no more than is expected of an educated gentleman, and such may be and should be the position of the dentist—at all events of the dentist of the future. I would not have it supposed that I underrate the value of extended professional education, but it must not be forgotten that long experience shows that the dentist with a surgical qualification does not practise general surgery, and the general surgeon does not practise dental surgery beyond the drawing of a tooth or opening of a gumboil. In fact, special and general practice cannot be conveniently associated, and consequently they are never really represented in one practitioner. Had it not been proposed to express an opinion on the subject of registration, which is but another name for compulsory education, I should not have ventured to occupy the time of the meeting at so great a length in discussing the education which should entitle the possessor

to registration. I sincerely hope we shall ere long secure to our successors in the practice of this most useful calling an ample education. But Scotland and Ireland must help England in the effort. Success cannot be gained single handed by either country. Before the three, acting in cordial co-operation, all difficulties will disappear. When the title of dentist is made to signify a properly educated practitioner we shall no longer hear of dentists who are ashamed of their calling at home, and who shrink from speaking of their occupation when abroad. Nothing less than an Act of Parliament will give us the needed power, and so soon as the proposed Act becomes law dental schools will, I venture to predict, rise up in many of our greatest cities which are provided with medical schools; and Edinburgh, from times long past famed for its educational resources, will not be the last to educate efficiently our northern dental practitioners.

At length, after much discussion and many meetings, and surmounting many difficulties and dangers, the Dentists Act received the royal assent on July 22, 1878, and on August 15, Sir John was the first to inscribe his name on the Dental Register. To two men was this success especially due; to Mr. Tomes and Mr. James Smith Turner—the hon. secretary of the Dental Reform Committee. So completely had Mr. Tomes identified himself with the Bill that he has been heard to say that had it not passed he believed the disappointment would have broken his heart. And at the meeting of the Committee on August 3, he said of Mr. Turner, “I cannot allow Mr. Turner to speak for himself on this question, because I feel that he will not do himself justice; whatever services I have rendered, he has rendered more, he has given more time, he has never raised any difficulty or any objection to any kind or amount of work or proposition that involved trouble and labour to the honorary secretary; the word difficult has not passed his lips. Patiently and constantly he worked onward, sometimes in the way of letter writing, sometimes in the way of attending in the lobby of the House, night after night, often till a very early morning hour. I feel bound to acknowledge, in discharging my trust, Mr. Turner’s unbounded devotion to our cause.” Although this is not a history of the Reform movement (except that any notice of Sir John’s career necessarily includes it), the name of Mr. Charles James Fox should not be omitted in recording its final success. As proprietor of the *British Journal of Dental Science* he kept himself in the background as much as possible. But it was he who, in 1870, in

that journal, stirred up the slumbering elements of reform and by his visit to Manchester in 1875 united the Provincial with the London members, and procured the formation of the Dental Reform Committee with its watchwords of registration and compulsory education.

On July 26, 1880 the profession presented Mr. Tomes with a portrait of himself by Macartney, and Mr. Turner with a clock, having a complimentary inscription engraved on it. Mr. Tomes, in acknowledging the presentation, said:—

He should not be able to find words adequate to express his grateful sense of the strong expression of their regard and esteem for what he might call his professional conduct through a long series of years, longer even than his old and valued friend Mr. Rogers had mentioned. Referring to his entering the Dental Profession, he said it was perhaps the fact of his doing so, by what he should now call a sort of side door beginning practice without knowing very much of the details of that practice, which led him to recognise very strongly, the absolute necessity of special training. Without underrating in the smallest degree the need of surgical skill or knowledge, he saw that a practitioner who would practise pleasantly to himself, with profit to his profession, and with advantage to his patients, must not only know the requisite amount of surgery, but must also begin practice with the requisite amount of manipulative skill. From that day to this, he had worked in favour of special education, and it had been from first to last a source of great gratification that the progress should have been steady and certain. When the Medical Bill was in the House of Commons, he was partly instrumental in the provision of a clause, whereby the College of Surgeons was empowered to institute examinations in Dental Surgery, believing as he did that, sooner or later, that clause would be the first step on the ladder which would lead to what they now had, a Dental Act, converting that which was permissive legislation in the first instance, into compulsory in the end. The steps taken from the time the College of Surgeons instituted its examination in Dental Surgery, were familiar to them all, but he could not refrain from congratulating the profession on the existence of the Dental Act, which he maintained against all odds, was an Act conceived in a liberal and fair spirit, an Act which attempted to deprive no man of his established rights, whether those rights consisted in mere practice or in using certain titles and names. That this was the feeling of the profession generally, was sufficiently instanced by the fact that 1,150 dental practitioners signed a petition in favour of the Bill, out of 1,900 to whom the opportunity was offered. He mentioned this because it was just the one point that had been called in question

by those who said the title of Dental Surgeon should have been limited to members of the College of Surgeons. The attempt would have been a great injustice, and one which no House of Commons would have sanctioned. It was said also, that the Profession had been injured, because people were entitled to use designations which they did not previously possess. Really, it was nothing of the kind. The Bill did not entitle a man to use any designation that he could not use before, but it limited him so far, that he could not use the special designations which the Bill recognised, unless he possessed them. The outcry with respect to this particular question had been very loud, he might say almost hysterical. Strong expressions had come from an Association which, did they not know otherwise, might be fancied almost to be an Association of timid ladies, so violent had been their outcry of fancied injury and dreaded hurt. He hoped, however, that after a while when it is again recognised that persons are judged on their individual merits without reference to the attainments of those whom the accident of a similar calling may place in the same register or next house, it would be seen that the only thing had been done, that under the existing circumstances could be done, and that the Bill was conceived and carried through in a fair and liberal spirit. After paying a high compliment to the admirable services rendered by Mr. Turner, and warmly thanking the chairman and committee, he said the mark of approval they had given to his own conduct was a great source of gratification, inasmuch as it was a testimony of their approval at a time in his life when much was passed and little remained, when he had to look back upon actions past, rather than to look forward to those that were to come. He accepted it with great pleasure and gratification, and the more so because he did not think he was likely to lose their esteem. It would be very hard if in the little time that remained, he should part with the good opinion that had come to him after so many years of professional life, a life in which he hoped he had injured none, but had as a practitioner acted in a manner creditable to himself, and advantageous to his younger brethren. If he had so far succeeded then he had but discharged a duty he owed to a profession he had pursued with pleasure, and the practice of which had placed him in circumstances sufficiently easy to render the later years of life free from the obligation of toil.

A little later on Mr. Fox also was presented with an illuminated address, but, at his own request and on account of his long and serious illness, privately at his residence.

On dissolving the Reform Committee Mr. Tomes pointed out the necessity for an association, on similar lines to the British Medical Association, "to watch over the general

interests of the profession, especially with reference to carrying out the provisions and spirit of the Dentists Act." In March, 1879, a large meeting was held in London, and the British Dental Association was formed with Mr. Tomes as its President. The post was not a sinecure. The Dentists Act did not please everybody, and, moreover, much confusion arose in connection with registration, but Mr. Tomes, in the face of great difficulties, rendered invaluable service to the Medical Council and to the profession by his assistance in getting the Act into working order. A valuable collection of the "Dental Proceedings of the General Medical Council," &c., scattered through the JOURNAL OF THE BRITISH DENTAL ASSOCIATION, was published in book form in 1882 entitled, "Papers relating to the administration of the Dentists Act," and under the same cover are "An Address delivered at the Annual Meeting of the Association held at Liverpool in August, 1882," by Mr. Tomes, and also an "Appendix recording consecutively some of the imperfectly understood leading facts respecting the origin of the Dentists Act and its passage through Parliament," also by him. On reading these one is struck with his wonderful mastery of every detail of his subject, and his skill in marshalling his facts and using them to the best advantage. And when one reads, side by side with these documents, private letters from him, showing how much he is oppressed by bronchial trouble, and how he feels the limitations of advancing age, one feels the impossibility of being sufficiently grateful for such sacrifices as he made for the good of his profession. But again, he had to be content with but partial success as regards registration. In one letter, February 15, 1881, he says he is "savage, horribly savage," and in the next, February 18, 1881, only three days after, he writes, "I am full of all sorts of schemes for our betterment, and do not despair of a good result in the end."

In the autumn of 1881, an International Medical Congress was held in London, and a dental section was included for the first time in the history of these Congresses. Mr. Tomes was elected a Vice-President, and on August 5 he read a paper on "The Study of Dental Surgery and the means thereto," which is an admirable exposition of the principles on which the present system of dental education in this country is founded. It was as follows:—

Dental Surgery has within the present century, by the full consent both of the medical and general public, developed into a well-defined speciality. The medical practitioner refers all dental cases to a dentist where one is at hand, and the general public select him as the fittest to help them in all cases of dental trouble. No apology, therefore, need be offered for the separate practice of Dental Surgery, neither need arguments be put forward in support of its continuance as a distinct branch of surgical practice. The necessities of society on the one hand and the technical requirements of the dentist on the other hand, have determined the condition of separateness. But this great international meeting affords a fitting occasion to enquire how the accepted condition can for the future be met, so that the public may be best served, for therein rests the sole cause for our presence, either as special or indeed as any kind of practitioners whatever.

Utility alone is the excuse for the dentist's existence, and the full recognition of this fact brings us to the question of how and by what available means he can become most useful? How he can best fulfil the trust imposed on him as a specialist, bearing in mind that on account of his supposed superior special knowledge, he is consulted, and thus assents to the belief that the dentist is far more capable than the general surgeon in the treatment of dental ailments. Clearly his honour—nay, even his integrity—is pledged to render himself in the highest degree capable of discharging to the fullest the freely-accepted duties. In admitting the social necessity for the presence of the special practitioner, the need for his special education is conceded, and it is to the wide question of what should be the education of the dental practitioner, for the determination and the development of which, we, as practitioners and teachers, are responsible, that I would call the attention of the meeting.

Before proceeding further, however, let me state that I wish it to be understood that all I have to say upon the subject of dental education, applies only to those who have yet to be educated and to those who possess neither unusual fitness nor unfitness for the pursuit of dental studies. And furthermore I desire to state that any opinions I may express as to what can and should be done, are intended to apply only to education in England. It will be for the representatives of other nationalities, to tell us what system of education is most applicable and suitable in their respective countries.

In the first and second decades of the present century, dental practitioners were few in number, and for the most part, but not in all cases, members of the medical profession, who at the onset of practice had but a slender knowledge of the duties of the dental surgeon even as they were then understood, or at best they had such an amount of knowledge only as the accident of a good or bad private instructor might impart, in all constructive matters depending from the first upon the assistance of dental mechanists. Other persons commenced

their career as young men or boys in the laboratory of a dental practitioner, acquiring therein in the course of an apprenticeship extending over five or even seven years, great manual skill, but whose claim to surgical knowledge at the expiration of pupilage, could not be sustained. Yet from this class of persons some of the most distinguished practitioners of the last generation were derived. The one spent those years, when to learn is easy and authority in the teacher is effective, in the acquisition of manual skill ; the other in the acquisition of medical, I will not say surgical knowledge, in the strict meaning of the term surgical. Hence it was that practice was approached from two wholly different sides, and resulted in the production of practitioners of two distinct classes ; one competent to advise, the other competent to treat, but neither fully competent both to say what should be done and to do it effectively.

Towards the end of the second decade dentists began to increase in number, and each year up to the middle of the century brought new candidates for practice, the vast majority of whom came directly from the dental laboratory, and were, for the most part, inferior in general education to the surgeon, in whose medical knowledge they had no share. Out of this educational difference arose an interprofessional division, not to say jealousy, in which society took but little interest, each person selecting for himself a practitioner from whom he hoped to secure all the advantages that treatment could effect, and the choice as often fell upon the unqualified as upon the surgically qualified practitioner. Among the more intelligent practitioners it came to be freely admitted that dental education, from its one-sided character, was in a very unsatisfactory condition ; and after some few years of discussion the opinion was generally accepted that the general and special portion of the dental training should go on simultaneously ; so that both manipulative skill and surgical knowledge should be acquired in the days of our youth, when the power to acquire is at its best, and at the only time, indeed, when a high degree of manipulative skill can be acquired.

A consensus of opinion as to requirements having been obtained, effectual action soon followed.

But we were not the first to recognise the necessity of a systematic dental education. Our American brothers had not only felt but provided for the need in the organisation of dental colleges ; and we, in following in their footsteps, and profiting by their experience, accepted an obligation which should at all times be freely acknowledged.

The history of the organisation of the past and present dental colleges of America has been published in "The History of Dental and Oral Science in America," 1876. From this and from Dr. Eliot's address, delivered before the American Academy of Dental Science, 1879, and from the prospectuses of the American dental colleges, I shall take such facts, as should be stated in acknowledgment of the

work of our predecessors, and of those differences of method or requirements in education, which differences of attendant social or national opinions have rendered desirable or necessary.

In order to arrive at a full understanding of the constitution of the American dental colleges, it will be desirable to refer very briefly to the state of medical education and of medical colleges, upon the lines of which the dental schools were, to a certain extent, of necessity drawn. For this information I am wholly indebted to the "Special Report upon Medical Education and Medical Institutions in the United States of America, 1776-1876," prepared for the United States Bureau of Education by N. S. Davis, A.M., M.D., and to the address on "The Relations of the Medical Profession to the State," by D. B. St. John Rosa, M.D., 1879.

In early days Scotch graduates, settled in America, organised a university drawn after the northern model, but it was soon found that educational demands upon the student, readily met in Scotland, were altogether beyond the powers of a youth of a newly settled country.

Hence, to avoid failure, the standard had to be lowered in favour of private pupilage. After the War of Independence, according to Dr. Davis, universities or colleges sprung up in the several States, subject only to the dormant control of the Legislature of the State in which they were situated, and from which they derived their corporate powers. Neither the dominant feeling of the country in favour of individual liberty, or the multiplication of licensing bodies, tended to arrest the gradual lowering of the terms upon which the doctorate in medicine could be obtained, and "the fact," says Dr. Rosa, "that the degrees conferred by the colleges became practically recognised throughout the whole country as a sufficient licence to practise medicine in all its branches," gave the student an opportunity of obtaining a degree wherever it was granted upon the most convenient or easiest terms; fully justifying the complaint of the president of the Medical Society of New York, in speaking of medical colleges, to the effect that "the present necessary laxity in admissions and in final examination, fairly overwhelms the land with physicians, many of whom are only so by title." This is but describing a state of things that existed in our own country at no pre-historic time, against which great effort had to be made before it was brought within control, and practically to an end. Its bearing upon our subject is important in so far only as it no doubt influenced the institution and constitution of dental colleges in America, created in 1840 and afterwards.

The distinguished president of Harvard University, Dr. Eliot, in his admirable address on "Dental Education," divided the subjects which constitute the fitting education of the dental surgeon into those which are peculiar to the general and to the special surgeon, and those which are common to both. The general he estimates as three-fifths, and the special subjects as constituting two-fifths of the whole educa-

tion ; and there will be few dissentients to this division. Keeping Dr. Eliot's estimate in mind, but that the medical degree was given and taken on such easy terms, it would have been difficult from our standpoint to understand how it was that so many of the dental colleges from the first undertook to educate their students in medicine and surgery, in the presence of schools devoted to these subjects, furnished with all the multitudinous appliances necessary for success in teaching, and with teachers of experience and distinction ; and with the further evil of withdrawing the dental student from advantageous association with the general student in the study of subjects common to general and dental surgery. The separation of the students by this limitation to a special school, engendered a distinction of social position to the obvious disadvantage of the dental practitioner, whose pretension to the necessary amount of medical or surgical knowledge would be challenged by those who had studied under more favourable circumstances and under the guidance of established teachers. For however little professional education may be forced upon the individual student, there has never been a time when a diligent and determined student could not acquire a competent knowledge of his profession in the medical schools of America or of our own country.

Even a casual study of the organisation of the American dental colleges, leads to the inevitable impression that the Americans were, and indeed still are, strongly and rightly impressed with the absolute need of thorough training ; and although not in a position to enforce the acceptance, yet felt bound to offer to students every inducement to acquire a sound knowledge of the special subjects, and of the requisite manipulative skill. The general subjects appear to have received less attention, or, at all events, occupied in the college prospectus a less prominent position. In some cases, indeed, it would almost seem that a college faculty thought that a sufficient knowledge of general surgery could be acquired in the study of the special subjects of dental surgery.

It was, however, felt in this country that the prevailing medical education was, as a question of degrees, not in excess of what should be required of the dentist ; but that while it fell short to the extent of two-fifths of the whole in the direction of strictly dental knowledge, it exceeded by two-fifths in special medical knowledge, the amount which could be reasonably asked of well-educated dental practitioners. This opinion was fully expressed in a memorial, addressed to the English College of Surgeons, in the following terms : "The memorialists do not suggest an education and examination *inferior* to that required of the medical practitioner ; but propose a certain difference in *kind* only, not a difference in *degree*—an education and examination specially adapted to the requirements of the dental surgeon, as distinguished from that fitted for the general surgeon."

The value of the foregoing paragraph has not been fully or rightly

estimated either here or elsewhere. Equality of education, professional or other, does not necessitate identity. A parson, a lawyer, and a doctor, may be equally well educated. The degree of education may be the same in all, but some of the subjects embraced in each profession will be different. So it may be with a dentist and a doctor, the degree of culture may be equal, but in part the subjects of study will be different.

It has been urged that dental should come as supplemental to medical knowledge, that the practitioner should be a medical man first and a dentist afterwards. This opinion might be sustained if the position were reversed—a dentist first and doctor afterwards—provided all students, or even the majority, were sufficiently rich in money and time to extend the educational period from four to six years, or from three to four and a-half, a condition of things which obtains neither here nor, according to Dr. Eliot, in America.

Four years are allotted to the study of medicine, and the medical student has not an hour to spare for any other subject, hence it becomes needful to determine what subjects in the medical curriculum can be lessened in extent or wholly omitted, so as to find time within the same four years for the effective study of dental surgery as a science and practice. This problem has not, perhaps, been wholly solved, but as the latest organisers of a complete scheme of compulsory dental education, it is hoped we may claim to have provided the most complete curriculum hitherto brought into a national use. The details of this were determined by a committee of the Medical Council, consisting of the representatives thereon of the medical authorities which, under the Dentists Act, grant dental qualifications, the twenty years' experience of the College of Surgeons of England being placed at their disposal. They reported in favour of, and the Council adopted without material variation, the curriculum originated by the aforesaid College. The unconditional insistence upon an attested preliminary education before a person is allowed to commence his professional studies, is a feature of great importance in the existing regulations, inasmuch as it ensures to the student an amount of knowledge and of mental training which renders him competent to understand without difficulty the language of science, and to follow with comparative ease the methods of scientific instruction and investigation. Before this great educational step was taken, pupils not uncommonly entered upon their professional studies so poorly informed that much time was lost in the attendance upon lectures which they but very imperfectly understood, and consequently, at the outset several lectures had to be delivered for the purpose of general instruction, and thus of preparing the student to take advantage of the subsequent course, rather than of imparting available medical knowledge. Much has been said against the vast number of lectures students have been required to attend, and especially against repetitions, and the objection is no

doubt valid now that preliminary education is enforced, and the students thereby enabled to learn as much from one course as they formerly did from two courses. There may be difference of practice, but there can be no difference of opinion here or elsewhere as to the advantage to the student of an attested preliminary education.

Before entering upon the consideration of the instruction common to a medical and dental education, I will quote a few sentences from an "Address on the Study of Physiology," by Dr. T. M. Purser, and ask you to read therein Dental Surgery for Medicine :—

"I have said, your business here is to learn Medicine ; and you learn the other subjects only as stepping-stones to this ; you do not come here to be made anatomists, or chemists, or physiologists. If you want to be an anatomist, you must give your life to it ; and so of the other sciences. But you learn those parts of these sciences which are essential, in order that you may take the next step safely ; so much anatomy, physics, and chemistry, as are essential for physiology ; and so much physiology as is essential for medicine, of which you should know all that is known."*

I will venture also to bring to your notice the following relevant paragraphs from the address of Dr. Michael Foster, in which he contends that topographical anatomy, which has hitherto been studied in some part as a mere mental training, should now to a certain extent give way in favour of a more complete knowledge of physiology. He says : "The details of topographical anatomy have the peculiar feature that, although they can only be learned with infinite pains and labour, unlike other things hard to learn, they vanish and flee away with the greatest ease. I would confidently appeal to any audience of practical men, how much of the huge mass of minute facts, which in their youth they gathered with so much toil, remained fresh in their minds two years after they passed the portals of the college ; how much now remains to them beyond a general view of the parts of the human frame, and a somewhat more special knowledge of particular regions, their acquaintance with which has been maintained by more or less frequent operations. I would confidently ask them what is the ratio, in terms of money or any other value, which the time spent in those early anatomical struggles—say over the details of the forearm—bears to the amount of that knowledge remaining after twenty, or ten, or even five years of active practice, or to the actual use to which that knowledge has been put."

Dr. Burdon-Sanderson, in his introductory lecture, says :—"The precious years which immediately precede a man's entry on professional duty, are far too valuable to be wasted in learning anything he does not intend to retain."†

* *British Medical Journal*, November 13, 1880.

† *British Medical Journal*, October 9, 1880.

If we keep in mind these lately expressed and published opinions of these distinguished teachers, we shall be qualified to form a just estimate of the value of the current dental curriculum, regarded as a training in the principles of medicine, and of its relations to the current medical curriculum. Without substantial difference there are some slight variations in the divisions, and even in the designations of the lectures required by the several surgical colleges. On this account it will be convenient in making a comparison to take the respective courses of study of the English college; and the more so as its dental curriculum has been in successful operation for the best part of twenty years.

If, then, we refer to the tabulated statement given at p. 293 of the June number of this Journal, it will be seen that the dental student is required to attend one winter (six months') course of lectures on anatomy in a recognised medical school, and a second like course, or in lieu thereof a course on the head and neck. He is required to have dissected for nine months, in other words, during a winter and a summer session. The medical student on the other hand must attend with no alternative two winter sessions of anatomical lectures, and dissect during two winter sessions, or twelve months. In fact, the dental student is relieved of part of one course of lectures, and of three months' dissection. But if any credit is to be given to the opinions I have quoted, enough, surely, remains for the education even of the medical, and certainly of the dental student. We know quite well, the knowledge of a subject got up merely for the purposes of a pass will not be retained, and who will contend that a minute knowledge of the anatomy of the foot will be of sufficient practical worth to the dentist to be retained in his memory, and if not to be retained, then precious time, Dr. Burdon-Sanderson says, should not be wasted in its acquisition. That which is true of the foot, is true also of the minute anatomy of many other parts of the body, with the treatment of which in disease the dental surgeon is not either directly or indirectly concerned.

A winter six months' course of lectures on physiology is required alike of each, but the dental student is excused the thirty lectures, or meetings of the class, on practical physiology which are compulsory on the medical student. He will do well to decline this exemption; for a full knowledge of physiology is equally required for the intelligent practice of any and each branch of surgery. It is of all subjects the most interesting, and time cannot be misspent by any manner of student in its study; neither need we fear that the knowledge of physiology will be lost either to ourselves or those who may ask our services. The attendance upon one course of lectures upon surgery during one winter session is required in each curriculum, but the attendance upon a six months' course of practical surgery is not required of the dental student.

A course of lectures upon chemistry and a three months' course upon practical chemistry is required in each curriculum, and in like manner a course upon materia medica, and also upon the practice of medicine.

A course of lectures upon forensic medicine, midwifery, pathology, practical pharmacy, and vaccination are replaced by other subjects in the dental curriculum.

We now come to attendance upon the practice of a general hospital. The medical student attends the surgical practice during three winter and two summer sessions, while the dental student attends during two winter sessions. The former is required to attend clinical lectures on surgery for two winter and two summer courses, but two winter courses only are required of the latter. And here the pupilage of the dental student at a medical school and general hospital ends. He is not required to attend the six months' dressership, the *post-mortem* demonstrations, the practice of medicine and clinical medicine of the medical curriculum. But omitting these, can it be said with any show of truth, that the dental student has not had ample opportunities of acquiring a sound knowledge of the principles and practice of surgery, and if in the individual case that knowledge has not been acquired, it will be for the surgical section of the Board of Examiners to refuse the qualification of which they, with the dental section, are the constituted guardians of the public interest.

The all important special subjects compressed in the dental curriculum now claim our attention. In these the medical student takes no part, while it is by the exercise of them, under the direction of his general medical knowledge, that the dentist takes and holds his place in society.

The conditions imposed upon dental students are, that he shall, subsequent to his having passed the preliminary examination in general knowledge common to the dental and medical student, have devoted four years to the acquirement of professional knowledge; have been engaged during a term of three years in the acquirement of a practical knowledge of clinical dentistry under a competent instructor; have attended and taken part in the dental practice of a recognised dental hospital or the dental department of a recognised general hospital, during a period of two years; have attended two courses, or not less than twenty-four lectures on dental anatomy and physiology, human and comparative; two courses, or not less than twenty lectures on dental surgery, and not less than twelve lectures on metallurgy, and a like course on mechanical dentistry.

These then are the subjects and conditions which take the place of those remitted from the medical curriculum, and who can justly say they do not impose a tax equal to the remission, upon the intelligence, the industry, and the time of the student. It may indeed be contended

that a greater load is imposed, for it is the opinion of those engaged in instruction, and of those recently instructed, that nothing can be remitted from the special division of the curriculum. The hospital attendance must be exacted almost day by day during the two specified years, in order to attain adequate manipulative skill, without which the practitioner would be as the musician who cannot play, the artist who cannot draw, the sculptor who cannot use the modelling tool or the chisel, or the dental critic who should be able to surpass but cannot equal, the work he condemns in others. It is one thing to know the scientific principles of the art, but it is quite another to carry them into effect. This requires an amount of manipulative power, which can only be attained by long and careful practice under a competent instructor. The fingers must become unconsciously obedient to the will, they must follow it automatically as the fingers of the skilled pianofortist execute the mental reading of the work he is playing, or as the hand of the sculptor produces the form the mind has conceived. Short of this unbidden obedience of hand, the performer would be but an amateur, and his professional life one long apology.

It will be admitted by all that skill of hand can be attained only by long practice, and few will contend that one time is as good as another for the training. Mr. Fawcett has told us that the blind may be taught a bread-winning trade in their youth, but that adults who have lost their sight cannot acquire sufficient skill to secure independence. We know that successful musicians and artists commence their studies in youth, and have given promise of power before they have attained to manhood. If we turn to the artizan class it will be found that he who fails to acquire skill of hand during his apprenticeship, seldom attains to excellence afterwards. There is no reasonable ground for doubting that the hand in youth develops anatomically in the direction of its exercise, and acquires thereby a power in that exercise to which the adult hand seldom attains. These facts have an important bearing upon the question of the time at which the dental student should proceed with his practical education, for the skill needed by the dentist is inferior to none of these. The results of professional examinations fully establish the fact, that the medical and dental curriculum cannot be honestly fulfilled in the same four years. Yet it has been said that the practitioner should be a surgeon first, and a dentist afterwards, or in other words, the entrance upon the special division of the dental curriculum, should be delayed until the surgical education is completed, thus deferring the manipulative training to a period when the attainment of excellence is difficult, and in its highest degree, perhaps impossible. To devote the days of our youth to the acquisition of knowledge we do not intend to increase, to the exclusion of the knowledge by the exercise of which we propose to gain our bread, would be, I contend, a great error, and the more so, as the remitted portions of the medical curriculum can, if desired, be taken up when the dental education is completed.

My strong advocacy of special, must not be interpreted as indifference to medical, qualifications. I would give every possible encouragement to the attainment of the latter, not, however, as a substitute for, but as a supplement to the dental degree. Educationally, the relations of the membership to the dental licence may be regarded in the same light as the relations of the fellowship to the membership are regarded. This view will indeed take effect in certain appointments. In many of our hospitals, although the membership of the College of Surgeons is a full qualification, the governing body require that their surgical officers shall be Fellows of the College. Whenever the Fellowship of his College is required of a candidate—provided the Fellowship implies a higher degree of professional knowledge than the Membership—it may justly be required of the dental candidate for office that he shall possess the Membership in addition to the dental licence of his college.

The profession at large must be congratulated upon the recent determination to enter in the Dentists' Register surgical degrees as additional qualifications. It may be said that this should have been done from the first, but those who have practical experience in bringing an Act into full operation, know quite well that success requires patience, perseverance, and last, but not least, forbearance.

Upon the question of examinations and examiners I need say little. The former will, in their character, follow the lead of medical examinations, and it is provided in the Dentists Act that should the conjoint scheme come into operation in medical, it will do so also in dental examinations.

The examiners are the guardians, on the part of the public, against incompetence, and should, as a matter of course, be independent of the pecuniary success of the schools, and collectively irresponsible for the professional instruction of the persons they are called upon to examine.

In reviewing the task imposed on the student, it may be asked whether I have not overstated the amount of special training needed to ensure the acquisition of the necessary manipulative power. I would answer, No, with all the emphasis of which I am capable. For I contend that a high degree of skill of hand is absolutely necessary to professional competence—that competence is necessary to self-respect—and that self-respect is necessary to that professional rectitude, without which personal comfort in practice would be imperilled, and professional status would be but a shallow fiction.

Furthermore, that with the existing opportunities a high degree of skill can be gained by perseverance and due expenditure of time in pupillage, and that it is the bounden duty of the teacher to press, and for an examiner to demand, its possession.

Such, then, are the lines upon which the study of dental surgery have been drawn—so drawn as to secure adequate knowledge and

skill in the practitioner—and with the view, therefore, to a certain difference in *kind*, but to equality in *degree*, between the compulsory education of the medical and of the dental practitioner.

If in this imperfect sketch I have entered at certain points too far into detail, or occupied too much time in their description, extenuation for my proclivity may be pleaded on the score of the high degree of satisfaction, not to say pardonable pride, which the surviving members of my generation feel in seeing an educational scheme, in the origination of which they took part, completed, and rendered national, and a calling heretofore of undefined position, elevated by the Legislature to the rank of a learned profession.

In 1883, a very high compliment was paid to Mr. Tomes, both flattering in itself, and by his association therein with one of the greatest men of the age. The College of Surgeons has the right of conferring annually on two of its members its Honorary Fellowship; and in this year Mr. Tomes and Mr. Huxley were selected for the honour, as representative men of science, worthy of special regard.

In the early days of the Odontological Society it had been customary for each President to present his portrait on leaving office. When Mr. Tomes' turn came, he, with characteristic modesty, substituted for his portrait a prize for the best essay on dental caries. But the Society had often lamented the absence of the portrait of one of its principal founders and its most eminent member; and Mr. Tomes having been persuaded to sit once more, a portrait by Macartney was presented to the Society in 1884.

At his age, and after so many years of incessant and exhausting work, it is not to be wondered at that he should feel the absolute necessity for rest; and in a private letter dated May 6, 1886, he writes: "the Bill (Medical Acts Amendment Bill, 1886), passed without opposition its second reading; and if it passes, with it comes the end of my dental work." Curiously coincident with this declaration came, on May 28, the offer of a knighthood "for eminent services rendered to his profession." With his usual diffidence he at first hesitated. Very early in the morning of the 28th, he telegraphed to a friend announcing the offer, and that it was being "considered." His friend immediately worded a return "Be good and benighted" (so that the telegraph officials should not know the real meaning). But, fearing lest this might be looked upon as making a joke of a serious matter,

he substituted for it "For the good of the profession," well knowing that that argument would be irresistible.

In August of this year the British Dental Association held its annual meeting in London, and once more Mr.—now Sir—John Tomes, was called to the Chair in the absence, through illness, of Mr. White, of Norwich. And in August, 1887, on resigning the Presidentship of the Representative Board, he took his final leave of the profession in the following words:—

GENTLEMEN,—The time has arrived, if it has not over passed, when it becomes my duty to resign the Presidentship of the Representative Board. I have held this position of trust and of responsibility ever since the formation of the Association, and at the Cambridge meeting I accepted my re-election for a further term of three years, with the understanding that whenever the Medical Bill then contemplated by the government became law, I should resign my presidency. The Medical Act, 1886, has with its dental clauses now come into operation, and so far as can be seen, any legislation affecting the dental profession lies in the far future. So long as legal changes were undetermined, I felt that I might be able to render some service to the profession. Now that the contemplated changes have been made, there are other members of the Association who can discharge the duties of the presidentship far better than I. Indeed, those duties have for the most part been discharged very effectively and faithfully during the last three or four years by your hard-working Vice-president, Mr. Turner, and I have, I fear, oftentimes received credit for work he has done. For my shortcomings I can only offer the valid excuse of a state of health which is believed to require complete indoor life during the cold months. My absence from your meetings in the past has been compulsory, and there is no reason to suppose that in my now short future, similar, if not more stringent, precautions will not be prescribed, thereby rendering my attendance at your future meetings impracticable.

Hitherto my absence has not, I think, been prejudicial to the interests of the Association, but a continuation of the practice does not admit of defence. Heretofore there seemed to be special reasons why I should not vacate the chair, but these have ceased to exist, and I have no longer any excuse for allowing my name to appear as your president.

Retrospect is the province of the aged, for they alone possess the personal knowledge of past events by the progressive occurrence of which the present position has been gained. Had any one of these events been different, the present result would have been other than it is. Very shortly few if any of us will remain who practised in the time when a reasonable amount of dental knowledge and skill was

limited to a few individuals, and those were for the most part personally unknown to each other. To these survivors of an earlier state of things, the change for the better has exceeded in degree their most exalted expectations. In those days the rank and file was recruited from persons of low educational advantages and whose skill was limited to the work-room standard; now the profession is strengthened by the entrance only of persons of education and of tested skill and experience. The student when he has gained his diploma is more perfectly educated than is the member of any other profession of like standing, for during his professional education he has performed again and again all the operations and determined (under supervision) the treatment of every description of case he will in after years be called upon to treat; an advantage enjoyed by no other class of professional students.

Amazement is the feeling that takes possession of the mind, when those who have lived through and seen the great changes, think of the present state of perfection to which dental education has attained. To the younger members of the profession this may seem a strong statement, but they have not the personal knowledge of that which once was wherewith to compare that which now is. They have not felt the well nigh intolerable difficulties that stood in the way of obtaining an adequate amount of knowledge and skill necessary to the rightful discharge of professional duties—difficulties which, by the very weight of their pressure, induced the reformatory efforts which, steadily pursued through a generation, have brought us to our present prosperous position. Aided by the Legislature the progress has been continuous and by no means slow. The dental charter granted to the Royal College of Surgeons of England may be taken as the foundation stone of the preconceived structure, the beneficial working of which made the Dentists Act an achievable result. No reasonable person can doubt that both charter and Act have been in the highest degree useful and even necessary to the development of dental surgery as it is now known and practised in this country.

That each has imperfections needs no saying, for it is not in the power of man to foresee and guard against all possible contingencies. But the defects are limited to minor and relatively unimportant provisions, such as will be cured by the mere lapse of time alone, while other so-called defects are faults (perhaps not at the time wholly avoidable), in the construction put upon the phrases of the Act by the Executive. One of these faults has been pointed out by the Master of the Rolls, and concurred in by the Lords Justices at the Court of Appeal. The Educational provisions and the rules for the subsequent registration of the licentiates, constitute the substance and meaning of the Act. The penal clauses are of inferior importance, for the educated always have it in their power to surpass the uneducated in the pursuit of any subject requiring the exercise of knowledge and

skill. The examination of apparently exceptional cases will generally reveal disastrous errors on the part of those whose success lay in their own hands ; and the success of charlatans is very generally much over-rated by those who complain of their presence as competitors for practice. We should be stupid indeed if we could not profit by experience, and those who were actively concerned in framing the Dentists Act would—were the opportunity to recur—amend some of the minor details. The critic is often a non-constructive person who assumes a position of unproven superiority when he challenges defects in work he has taken little or no part in producing.

Judged from the standpoint of results, the Dentists Act has to my mind been a great success. Who can justly say that the educational results have not been in the highest degree beneficial to the public and the profession ? and it will, in respect to fulfilling its purpose, compare favourably with any other educational Act. Furthermore, it requires that a list of the qualified, with a statement of the character of their qualifications, shall be printed each year, and provides also for the ready punishment of persons who pretend to the possession of such qualifications not having them. Beyond this Parliament firmly declines to go. The utmost limit in the way of protection to which the Legislature will give its sanction has been, I believe, reached in our Act ; and, if we were made the judges of the extent to which protection should be given to a profession not our own, I feel sure that we should not extend the limit beyond the line drawn by government for the protection of the dental profession.

Parliament has drawn a hard line separating the qualified from the unqualified, over which it will not allow the latter to pass. The penal clauses of the Medical Act of 1858 are much less clearly stated, and much less stringent than are the corresponding clauses of the Dentists Act. Yet the promoters of the Medical Act, 1886, were unable to introduce clauses of greater stringency for the remedy of an acknowledged defect. In my opinion we shall exercise good sense by abandoning all thoughts of attempting the gain of greater penal powers, and by working with liberality of purpose within the lines of our sufficient Act.

Before concluding I wish to offer to the Board my sincere thanks for the uniform support I have received from its members, and for the great personal kindness with which I have been at all times and by one and all treated. To Mr. Turner I desire on this occasion, and in your presence, to express my gratitude for the ever willing help he has rendered me in the discharge of my duties, frequently doing work which rightly should have been done by me, and for the doing of which I have received the credit really due to him. I owe to him a life-long debt of gratitude, a debt I cannot discharge. It has been my earnest endeavour, and I trust I have not been wholly unsuccessful, to conduct the business of the presidentship with strictly even

handed justice to all parties interested, and with especial regard to the interests of the profession taken as a whole. If at any time personal considerations may seem to have had some influence they must have operated by misadventure, for most certainly I have endeavoured to my utmost to resist such influences, whenever the common interest was concerned. I have often been absent from your meetings, not willingly, but because I could not help it, because the state of my health during the last few years has obliged me to keep the house in cold or doubtful weather. I may once more well ask your forgiveness for this oft-condoned fault. I resign my position as an active member of your body with strong feelings both of regret and of gratification ; I regret that the time has come when I can no longer pursue with energy and confidence in your midst, the line of action leading to the advancement in knowledge and skill, and to the maintenance of the honour of our useful calling. But I am grateful to have lived through a time when so much good work has been done, and to have lent a willing hand in the doing of it.

So long as I may live I shall be ever glad to do all in my power in the interests of the profession, the practice of which has enabled me to spend these latter and poorer days of life, if not in affluence, yet in ease. Any counsel I may give or opinion I may in the future offer must be taken for what it is worth, divesting it of all personality, and before any action is taken thereon it must have become the opinion or counsel of those who take upon themselves the responsibility of action, for they, not I, must be answerable for the results.

My professional career now comes to an end, and, as your President, I bid you farewell.

But although he sought rest from public work, his interest in the profession was as great as ever, and the advice of the "Sage of Caterham" was frequently sought on important matters and was never refused. The most kindly welcome always awaited those who went to Upwood Gorse on such an errand.

In 1885, or perhaps a little earlier, the pleasant custom began of inviting at about the end of July, a little gathering of those whom he called the "Seventies" or the "Veterans," to spend the afternoon at Upwood Gorse and dine there. But alas! as the Veterans increased in age they showed a tendency to diminish in number, and Sir John filled their places with their successors in the profession who continued the good fight. They were very happy meetings and will not soon be forgotten by those who took part in them. Possibly too, some little divergent currents may have been

brought back to the main stream on these occasions. Sir John was essentially a peacemaker in all the relations of life. He himself always looked forward to these gatherings ; and at the beginning of his last illness frequently alluded to the coming one ; never, alas ! to come.

In 1891, the British Dental Association again held its annual meeting in London, and among other festivities, a garden party was given at Upwood Gorse, to which about 500 guests went by special train, and were received with the most kind and genial welcome.

Sir John was always a keen sportsman from boyhood and an exceptionally good shot ; and in this pursuit he found a kindred spirit in Mr. H. J. Barrett. His last day's shooting was at Penshurst, in (we think) 1892, and although he had not carried a gun for years, he killed eighty rabbits with less than one hundred cartridges.

Towards the end of 1893, it accidentally became known that the coming 15th of February would be the "golden wedding" day of Sir John and Lady Tomes. The opportunity of showing once more its regard and affection was enthusiastically welcomed by the profession ; and on February 14, 1894, a small deputation went to Upwood Gorse. Mr. Brunton presented a silver gilt inkstand to Lady Tomes from the wives of the members of the profession ; Sir Edwin Saunders announced the foundation of a triennial "Sir John Tomes" prize to be awarded by the College of Surgeons "in recognition of satisfactory scientific work by Licentiates in Dental Surgery" ; and Mr. Hutchinson read an appropriate address on beautifully illuminated vellum, enclosed in an album of white morocco and gold, and signed by a large number of dentists. Sir John replied briefly and evidently under strong emotion. He was evidently very much gratified, especially when he knew that the College of Surgeons had accepted the trusteeship of the prize ; and that so his name was associated for ever with the great work of his life, the recognition of dental surgery as a department of general surgery.

In the summer of 1894 he suffered much from what appeared to be indigestion. In the early part of this year this had increased very greatly, and in May his illness assumed a more serious form. In spite of all that medical skill and care could

do he passed away on July 29, full of years and of honours. He was buried on August 1, at St. Mary's, Upper Caterham. A large number of his old friends—private and professional—amongst them being Mr. Trimmer, who also came as the representative of the College of Surgeons—attended to pay their last tribute to one of the best of men in his private life, and to the greatest of his profession.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

The Dental Hospital of London.

PRIZE DISTRIBUTION.

THE annual prize distribution of the Dental Hospital of London took place on Thursday, July 25, at the Royal Institute Galleries, Piccadilly. The guests were received by the Staff of the Hospital, and Fellows, then the distribution of prizes took place, Sir William MacCormac performing the ceremony.

The DEAN, in the course of his remarks, extended, on behalf of the Staff, a welcome to the guests, and referred to the site which had been acquired for the new Hospital building. The success of the school at the different examinations, and the large entries, were, he thought, sufficient guarantee of the high position the school held in the educational world. Various changes in the staff had taken place during the year, for they had lost the services of Messrs. R. H. Woodhouse and Hern as dental surgeons; while Messrs. J. Turner and A. R. Colyer had become members of the medical staff. Lastly, he referred in feeling terms to the serious illness of Sir John Tomes.

The following were the prize-winners:—

Saunders Scholarship: Mr. W. H. Pidgeon. Ash's Prize: Mr. F. J. Padgett.

WINTER SESSION, 1894-5.

Dental Mechanics.—First Prize: Mr. W. H. Pidgeon. Second Prize: Mr. H. K. Jeffes. Certificate of Honour: Mr. S. Colyer.

Metallurgy.—First Prize: Mr. G. Fisher. Second Prize: Mr. H. K. Jeffes. Certificates of Honour: Mr. A. W. Turton, Mr. S. Colyer.

Operative Dental Surgery.—First Prize: Mr. W. H. Pidgeon. Second Prize: Mr. W. Marston. Certificates of Honour: Mr. E. H. Mountford, Mr. H. K. Jeffes, Mr. A. W. Turton.

SUMMER SESSION, 1895.

Dental Anatomy.—First Prize: Mr. H. Dunlop. No Second Prize awarded. Certificates of Honour: Mr. S. A. Knaggs, Mr. A. Heath, Mr. T. W. Thew.

Dental Surgery.—First Prize : Mr. F. J. Padgett. Second Prize : Mr. H. Dunlop. Certificates of Honour : Mr. W. H. Pidgeon, Mr. W. H. Baker.

Students' Society Prize.—Mr. F. J. Padgett, Mr. H. W. Turner.

At the conclusion of the distribution Sir WILLIAM MACCORMAC delivered the following address :—

LADIES AND GENTLEMEN,—It is my pleasant privilege and duty this evening to address some few sentences of congratulation to the students of the London School of Dental Surgery on the occasion of this distribution of the prizes.

By the courtesy of Mr. Morton Smale I was able to see yesterday a little of the work going on at your hospital, and what chiefly impressed me was the great amount of work which was being daily accomplished there, and I may add the somewhat insufficient accommodation for its most useful purposes which the present hospital affords. It contains every appliance for the most efficient instruction in, and practice of, every branch of dentistry, and let us hope some rich philanthropist may presently have an opportunity of realising the extent and goodness of the work, and devote some of his wealth to the building of a new and larger hospital, which appears to me to be very urgently required.

With regard to those gentlemen who have just appeared before us to receive the prizes they have won, and I am very certain thoroughly well deserved to win, I would offer them my heartiest and most sincere congratulations. At the same time I should like, if I may, to say one word of warning to them. They should regard these prizes as an encouragement to further and, if possible, better work ; they are certificates that so far they have done well, and may well serve as stepping-stones to future successes. But if they act otherwise than as a stimulus to renewed exertion, these prizes will injure rather than benefit those who have obtained them. And to those who have striven, although unsuccessfully, to obtain a prize, I would offer my best congratulations also, not on their want of success, but on their honest, strenuous endeavour to succeed. The gaining of a prize is good, but the serious effort to obtain it is a much more important matter. If a man do that which he can with all his might, the mental effort brings with it a reward of its own of greater value than any prizes. Be sure that steady, continuous effort is the surest road to success in this as in every other calling in life. With every fresh struggle you become stronger and fitter to make the next, and the work becomes easier to you.

A spurt at the last moment sometimes snatches a victory, but this is an accident ; the old tale of the hare and the tortoise has this application to our daily life, that he who is most conscientious and enduring will in the end prevail.

The skilful, well-instructed dentist is a beneficent member of society,

and has it within his power to relieve a vast amount of suffering, and to promote from youth to age the health and happiness of mankind.

The teeth form an essential part of the human organism, and on their well-being much else depends ; they are second to no organ in their anatomical and pathological interest, and the comparative anatomy of teeth is, to my thinking, a fascinating subject. You have the whole range, not only of living animals to interest you, but the dead creatures of past ages may be almost reconstructed, as they lived, from their teeth alone. The teeth have no isolated, although they possess a special pathology, and to perfectly understand them implies a knowledge of the body as a whole.

To adequately meet the demands made upon you in your future career, you have had to pass through a very thorough training, not only in your special branch, but in general anatomy and physiology, in dissections of the body, in lectures on medicine and surgery. You have to acquire special knowledge in a long course of dental practice and work in a dental laboratory, besides a study of dental anatomy and surgery, mechanics and metallurgy. You then come up for your dental diploma, and as one of the examiners for that diploma I can vouch for the completeness of your education.

Some of you take the conjoint diploma of the Royal Colleges—I only wish all of you could or would do so ; and I would further take the opportunity to counsel you to cultivate some interest or occupation outside your professional work. Any profession too exclusively followed tends to cramp the mind and narrow a man's sympathies, and this you will best avoid by interesting yourself in some scientific or artistic pursuit which will agreeably and advantageously fill up your leisure hours. I should say your mechanical training is a matter of the greatest importance, and that too much time and labour can scarcely be bestowed upon it. Mechanical dentistry has developed amazingly of late, as surgeons have often occasion to observe. It is a study which will help you to acquire a steady eye, deft fingers, and a firm yet gentle mastery of detail.

There is no more sensitive structure than a tooth. The proper filling of a hole in one is not the simple matter that it appears. An unsuitable filling placed over an exposed pulp may cause agony to the sufferer. Success depends upon adequate knowledge, both scientific and practical, of the diseased conditions present and the manner of dealing with them. It is like the adjustment of a properly-fitting truss to a rupture. It is not a mere fit, or misfit, by an instrument maker that is required, but a knowledge of the form and nature of the hernia and many other details which are essential to a successful and even a safe wearing of this appliance.

I hope I have not too long detained you. There are many matters to which I might have alluded, but I shall only say this, that I think there is a very cordial and increasing appreciation on the part of the

medical profession, of the value of dentistry and the worth of those gentlemen who devote themselves to its practice. Doubtless this is in great part due to the increased educational advantages you enjoy, and the manner you have turned them to good account. May your good work go on and prosper. I am sure you will not fall into the error of believing that when you have satisfied the College Examiners you will therefore be satisfied with yourselves. You must continue to perfect your knowledge, to cultivate a scientific spirit, and to strive above all things to be honourable gentlemen.

There is, without doubt, a very great appreciation on the part of the general public of the soundness of teeth and the best means to preserve their usefulness. In schools, in the public services of the country—everywhere, in fact—an attention has been of late devoted to this subject it never before attracted, and there must be no lack of appreciation or knowledge on your part to meet the increasing demands which will be made upon you.

I will now only thank you for your patient attention, and say that I feel I have occupied in some degree the position of a well-known American humourist when he remarked that he generally preferred to talk on matters of which he knew nothing, as he was then least hampered in expressing an opinion.

The remainder of the evening was devoted to a *conversazione*, a selection of music being given under the direction of Mr. Herbert Schartau, assisted by Miss Pattie Hughes, Miss Carrie Curnow, Mr. Frederick Upton, and Mr. Hopkin.

Edinburgh Dental School.

PRIZE DISTRIBUTION.

THE annual presentation of prizes in connection with the Edinburgh Incorporated Dental School and Hospital, took place on July 18, in one of the rooms of the Institution, 31, Chambers Street, Professor Chiene presiding.

The report on the past session, which was submitted by the DEAN (Mr. Bowman Macleod), spoke of the continued success of the School as a teaching institution. During the session seventeen students were enrolled; and of the fourteen who completed their curriculum, twelve received the L.D.S. of the Royal College of Surgeons. At present there were thirty-seven students on the working roll. During the twelve months ended June 30, 1895, over 13,000 cases had been treated; and it was noted that more than one-half of the operations were for the preservation of the teeth, showing conclusively that the School was having a vast educative influence among the poorer classes in regard to the value of their teeth and the necessity of preserving them.

Having presented the prizes, Professor CHIENE, addressing the students, commended to their notice the career of Robert Nasmyth, the father of Scottish dentistry—in the first place, because he made anatomy the basis of his work as a dentist; and, in the second place, because he was the man who brought to Edinburgh the great John Goodsir, the surgeon, son of his lifelong friend, Dr. John Goodsir, of Anstruther. In the course of his address, the professor exhibited a diary written by Goodsir, father of the surgeon, along with a sketch-book containing a series of interesting dental drawings made by the surgeon himself; and he closed his address by presenting to the college, amid applause, a large number of letters written by Nasmyth to his friend Goodsir, the Anstruther practitioner.

Mr. BOWMAN MACLEOD, on behalf of the institution, cordially thanked the professor for his gift.

The following gentlemen received prizes:—

Senior Medal: J. Morris Stewart. 1st Class Certificate: Alfred Lamyman.

Junior Medal: T. R. D. Walkinshaw. 1st Certificate: C. L. Routledge.

McGregor Medal: Best all round senior student, J. Morris Stewart.

Ezard Medal: Gold Filling, R. J. Shiach.

Dental Anatomy.—J. A. Young, Charles Wood and Alfred Lamyman.

Dental Surgery.—Alfred Lamyman, J. Morris Stewart and T. A. Mackintosh.

Dental Mechanics.—Gold Medal: Charles Wood.

APPOINTMENTS.

A. R. COLYER, L.R.C.P., M.R.C.S., L.D.S., to be Assistant Dental Surgeon to the Dental Hospital of London.

J. HUTCHISON EDWARD, L.D.S., R.C.S.I., to be Dental Surgeon to the Manchester Warehouseman and Clerks' Provident Association.

FRANCIS H. ELLWOOD, to be Hon. Dental Surgeon to the Provincial Police Orphanage.

J. TURNER, F.R.C.S., L.R.C.P., L.D.S., to be Assistant Dental Surgeon to the Dental Hospital of London.

HORACE W. VAN DER PANT, L.D.S.Eng., to be Dental Surgeon to the Wimbledon Cottage Hospital, also to be Dental Surgeon to the Convent of the Sacred Heart, Wandsworth, S.W.

W. H. WHEATLEY, L.D.S.Eng., to be Assistant Dental Surgeon to the National Dental Hospital, Great Portland Street, W.

MISCELLANEA.

THE BENEVOLENT FUND.—The Hon. Sec. of the Benevolent Fund asks us to state that the widow of the late F. H. Colville, of Ifracombe, has started a boarding establishment in that town. The house is situated on the Esplanade, has a charming sea view, and a private marine promenade. Full particulars may be obtained of Mrs. F. H. Colville, The Esplanade, Ilfracombe.

ANTIPYRIN AND COCAINE IN THE TREATMENT OF TIC-DOLOUREUX OF THE FACE.—In two women suffering from tic-doloureux of the face, Dr. Grand-Clément, of Lyons, has obtained good results by the injection of the following mixture: \mathcal{R} antipyrin, 4 grammes: hydrochlorate of cocaine, 3 centigrammes; distilled water, 10 grammes. From one to several cubic centimetres of this mixture were injected in various spots on the face and in the painful areas. The face immediately became the seat of an enormous œdema, which rapidly subsided. These injections were repeated daily, and even, in case of necessity, several times a day. In both patients this treatment brought about the complete disappearance of neuralgia within a few days; but the cure was not radical. In one of them, the affection recurred twice at intervals of one year, though it was each time speedily checked by the same treatment. In the case of the other patient a recurrence also took place at the expiration of a year, and preparations were made again to have recourse to injections of antipyrin and cocaine, when she succumbed to a pulmonary affection.

INTRA-CRANIAL RESECTION OF THE FIFTH NERVE.—The *British Medical Journal* states that at the German Surgical Congress on April 19, Krause, of Altona, related two cases in which he had resected the fifth nerve by an intra-cranial operation. He says that removal of the ganglion is preferable to excision of the three parts of the nerves, and that it is not more difficult or dangerous, whilst it is more efficacious. In his opinion, Rose's method does not allow sufficient room for the performance of the necessary procedures, while it

makes arrest of hæmorrhage difficult, and the Eustachian tube may be ruptured and cause infective meningitis. In performing the operation Krause advises that a part of the squamous portion of the temporal bone should be removed, and the cranial cavity opened. Next the middle meningeal artery is ligatured, and the dura mater carefully detached from the bone. In this manner the Gasserian ganglion is exposed and removed. It may be adherent to the meninges, and if great care is not taken they may be injured or the cavernous sinus opened. If the latter happen the hæmorrhage must be arrested by packing with gauze, and further operation desisted from. One of the patients was a woman, aged 66, and after the operation she had complete paralysis (sensory) on the affected side of the face. There was no keratitis, although the cornea was insensible. The cure of the neuralgia was complete, and two years after the performance of the operation there had been no recurrence. The second case was also successful.

COCAINE POISONING.—Notes of a case of cocaine poisoning are given in the *Pharmaceutical Journal* for June 22: Two cubic centimetres of a 10 per cent. solution of cocaine were injected into the urethra of a young man, the subject of a urethral stricture. Some minutes afterwards cyanosis, dilation of the pupils, and profound coma came on, followed by trismus and tetanic convulsion. No effect was produced by ether, camphor, or inhalation of amyl nitrite. Oxygen and artificial respiration were resorted to, and a good effect was produced by the intravenous injection of 650 grammes of sodium chloride solution. The patient was quite unconscious for two hours and a quarter, and was not perfectly conscious until three hours had elapsed, when the only symptom was a slight right facial paresis; this disappeared the next day.

AN UNUSUAL CONDITION OF THE FAUCES.—A curious condition of the fauces, probably congenital in origin, is described by Dr. Robert Fullerton in the *British Medical Journal*. An examination of the patient's mouth showed an opening in each of the anterior pillars of the fauces. On the left side the soft palate was found not to divide in the usual way into an anterior and posterior pillar, but passed down as a single band in the

position of the anterior. Towards its lower attachment it becomes somewhat expanded and slightly directed backwards. Separating this band from the buccal wall is an elongated opening, which begins above on a level with the base of the uvula, and extends downwards to the gums. The posterior pillar on this side appears, therefore, to be absent. On the right side of the fauces there was a similar condition of parts, but here the band representing the anterior was somewhat broader, and the opening external to it rather larger than that of the opposite. Moreover, there was in addition a narrow strip of mucous membrane which arose from about the usual point of attachment of the posterior pillar with the soft palate, and passed downwards to its insertion below.

EPIDEMIC STOMATITIS.—Cases illustrating an epidemic variety of stomatitis were recently brought before the Society of Dermatology and Syphilography of Paris by Dr. Albert. The affection shows itself in marked desquamation of the mucous membrane of the upper and lower lip, with commissural fissures and red patches in the velum palati. From the diseased surfaces blood frequently oozes. The patients shown both belonged to the artillery corps in garrison in Paris, and Dr. Albert stated that it was the second time an epidemic of that character had come under his notice.

OXYPHOSPHATE OF COPPER.—In what may be called “desperate cases” Dr. W. V. B. Ames, Chicago, considers this preparation invaluable. It is made by mixing black oxide of copper, cupric oxide, with a solution of phosphoric acid. A phosphate of copper *per se* is formed which is held in solution in an excess of phosphoric acid. The cement is used in a plastic state and penetrates the tubuli of the dentine, exerting a positively embalming effect. It is insoluble in the fluids of the mouth after crystallisation. It is contra-indicated for crown setting from its caustic nature, but it is valuable for filling purposes where conditions admit. It cannot be used indiscriminately as it might cause an occasional devitalised and mummified pulp. Its permeation of the tubuli makes its use advantageous when it is impractical to thoroughly remove all of the semi-disorganised dentine. It arrests further destruction of that tissue and corrects the sensitiveness which renders further excavation impossible.

THE USE OF ANTISYALOGOGUES.—Writing to *Items of Interest* H. Otis Logue refers to the use of antisyalogogues in those cases where the rubber dam is impracticable and the saliva is difficult to control. In such cases he suggests sulphate of atropin, in $\frac{1}{150}$ grain doses, to be taken three-quarters of an hour before the patient is seen. This salt of atropin has a much better effect on the secretion than the ordinary alkaloid. Its manifestation lasts from four to five hours.

TESTIMONIAL TO Mr. W. R. HUMBY.—A gathering of the staff of the National Dental Hospital and friends took place at Pagani's Restaurant, on July 25, Mr. S. Spokes in the chair. The guest of the evening was Mr. W. R. Humby, who was presented with a testimonial by his late colleagues and old students, on the occasion of his retirement from his connection with the National Dental Hospital. The testimonial took the form of an illuminated address on vellum, and a charming water colour sketch by Haité. A selection of music, &c., by the members of the staff brought a most enjoyable evening to a close.

CHARING CROSS HOSPITAL—THE "HUXLEY" MEMORIAL.—In order to permanently record the fact that Professor Huxley obtained his early scientific training at the Charing Cross Hospital Medical School, the authorities have decided to record the fact by founding a Huxley scholarship and medal, to be awarded annually at the Charing Cross Hospital Medical School, and, if the funds raised permit, an annual public lecture to be delivered in the school buildings, dealing with recent advances in science and their bearing upon medicine, is to be instituted.

A COMMITTEE consisting of the following gentlemen has been appointed to carry into effect the above resolutions:—Sir Joseph Fayrer, M.D., K.C.S.I., Sir Guyer Hunter, M.D., K.C.M.G., two old friends and fellow-students, at the Charing Cross Hospital Medical School, of the late Professor Huxley; Dr. Henry Huxley, son of the late Professor Huxley; Dr. J. Watt Black, F.R.C.P., Hon. Treasurer; Mr. John H. Morgan, F.R.C.S.; Mr. Stanley Boyd, F.R.C.S.; Dr. Montague Murray, F.R.C.P.; Mr. Herbert F. Water-

house, F.R.C.S., Hon. Secretary. Contributions of any amount will be gratefully received (at the school) and acknowledged by the Hon. Treasurer, Dr. J. Watt Black. Considering the very large number of dental students who have received and do receive their training at Charing Cross Hospital, we think it will be well to make the scholarship of such a character that it comes with their curriculum, and so allows them a fair chance of competing for what must always be a prize of the greatest treasure.

LINING RUBBER PLATE WITH ALUMINIUM.—The following method of lining rubber plates with aluminium is given by a writer to *Items of Interest*. Aluminum rolled to twenty-eight gauge is annealed and carefully pressed and burnished to the cast, using preferably for this purpose the handle of a tooth-brush. By using a small enamel chisel, small loops may be made in the aluminium for attachment of rubber. The teeth are then set up in wax as usual for rubber plate.

NATIONAL MEMORIAL TO PROFESSOR HUXLEY.—A meeting was held at the Royal Society's rooms on Thursday, July 18, Lord Kelvin, P.R.S., in the chair, to consider what steps should be taken to promote a National Memorial to the late Professor Huxley. A provisional committee was formed, with Sir John Lubbock as treasurer, and Professor G. B. Howes as secretary, and it was decided to call a general public meeting after the autumn recess.

LIVERPOOL DENTAL HOSPITAL.—The museum of this institution has received a valuable addition to its collection from Mr. Fletcher, of Warrington, consisting of specimens of fine cuttings and art metal work, mounted in a beautifully finished cabinet. It is gratifying to find that Mr. Fletcher has not lost interest in his originally adopted profession, as such presentations testify.

Last month the annual picnic of the students and their friends took place. About forty, amongst them being the dean of the medical school, rowed up the Dee to Eaton. After a substantial meal at the Grosvenor Arms, Aldford, the genial and hospitable landlord entertained his guests at rat

catching and various games. The weather was all that could be desired, and a thoroughly enjoyable day was spent.

MANCHESTER ODONTOLOGICAL SOCIETY.—Election of Officers. The following are the office bearers for the Session 1895-6: President, Mr. Wm. Simms; Vice-Presidents, Messrs. W. Dougan, Ed. Houghton; Treasurer, Mr. H. Planck; Librarian, Mr. W. A. Hooton; Secretaries, Mr. F. W. Minshall (Council), Mr. D. Headridge (Society). Members of the Council (the last two being elected at the present meeting):—Messrs. P. A. Linnell, F. W. Masters, G. G. Campion, J. H. Jones, A. B. Wolfenden, G. O. Whittaker.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—During the July examinations the following gentlemen passed the first professional examination for the licence in dental surgery:—Robert John Shiach, Elgin; Ruby Grace Halliday, London; Thomas Roger Dove Walkinshaw, Newcastle; Herbert Percival Friend, Yorkshire; Charles Linnæus Routledge, Exeter; Richard Mason, Edinburgh; and Samuel Homer, Stourbridge; and the following gentlemen passed the final examination and were admitted L.D.S. Edinburgh:—Alexander Crerar, Edinburgh; Thomas Alexander Mackintosh, Edinburgh; George Paterson, Belfast; William Forsyth Tulloch, Elgin; Alfred Lamyman, Middlesbro'-on-Tees; George Crichton, Perth; Thomas Saunders Robertson, Kirkcaldy.

IN cleaning teeth mix the pumice with a solution of castile soap, instead of pure water. It cleans easier, leaving a smooth finish.

TO ADJUST RUBBER DAM CLAMPS PAINLESSLY.—A writer in the *Dominion Dental Journal* states that rubber dam clamps may be adjusted painlessly by slipping over their jaws small pieces of rubber tubing.

THE formula of Watt's metal for cast plates is: Tin, 40 dwt.; silver, 8 dwt.; bismuth, 16 gr.

THE NEW DENTAL EXAMINER.—Mr. Fred Canton has been appointed Examiner in Dental Surgery for the Diploma of the Licentiate in Dental Surgery, Royal College of Surgeons, England.

DENTAL HOSPITAL OF LONDON BUILDING FUND.—The following new donations have been received for the building account of the new Dental Hospital of London, Leicester Square, since the last list published in the Journal:—

Mrs. Wilfred Loder ...	£ 1 1 0	Mrs. Jebb ...	£ 1 1 0
Mrs. C. Meade ...	1 1 0	Richard Winch, Esq.	
C. E. Tule, Esq. ...	1 1 0	(additional) ...	10 10 0
Mrs. Alexander ...	1 1 0	A. W. Spens, Esq. ...	1 1 0
Lady Westbury ...	5 5 0	Mrs. Swan Sonnenschein	1 1 0
Lt.-Col. W. FitzGerald	1 1 0	James Higgs, Esq. ...	2 2 0
Mrs. Loder ...	1 1 0	Miss Lougrove ...	1 1 0
Alfred Marsh, Esq.,		E. L. Mocatta, Esq. ...	10 10 0
F.S.S. ...	5 5 0	Walter Perks, Esq.	
Miss Hepburn (per col-		(additional) ...	5 5 0
lecting card) ..	10 10 0	Messrs. Rothschild &	
J. B. H. ...	3 0 0	Sons (additional) ...	105 0 0
The Duchess of Somer-		Donation Box at Hos-	
set ...	1 1 0	pital ...	6 0 11
Miss M. Tennant ...	1 1 0	Miss Young ...	4 4 0
Saddlers' Co. ...	52 10 0	Leopold de Rothschild,	
Mrs. T. C. Baring ...	15 0 0	Esq. ...	5 5 0
T. Hayter Lewis, Esq.,		Alderman W. Vaughan	
F.S.A. ...	10 10 0	Morgan ...	10 10 0
Messrs. N. M. de		Mrs. R. A. Bullen ...	2 2 0
Rothschild & Son ...	21 0 0	George H. Wilson, Esq.	2 2 0
The Dowager Lady		F. Nettlefold, Esq. ...	10 10 0
Penrhyn ...	25 0 0	Rev. Cuthbert Robinson	1 1 0
Mr. Haskins ...	0 5 0	Duncan Mackinnon,	
Miss Brisco ...	20 0 0	Esq. ...	10 10 0
Miss Edwards ...	10 10 0	Colonel Calvert ...	10 10 0
S. Palmer, Esq. ...	10 10 0	The Honorable Miss E.	
Sir Mark W. Collet,		Wilson Patten ...	2 2 0
Bart. ...	5 0 0	Mrs. S. M. Aspland ...	10 10 0
Miss Jane Houghton ...	50 0 0	John Paget, Esq. ...	2 2 0
L. H. Powers, Esq. ...	1 1 0	Miss Cohen ...	10 10 0
Miss Anderson ...	5 5 0	Mrs. Stirling ...	5 5 0
The Misses Nutter ...	2 2 0	F. E. Hills, Esq. ...	5 5 0
Miss Eliza Rose ...	1 1 0	R. B. Littell, Esq. ...	10 10 0
Mrs. G. Mortimer ...	1 1 0	Viscount Boyne	10 10 0
The Earl of Lovelace ...	5 0 0	Dr. Edwin Neatby ...	2 2 0
Captain Nevell H.			
Reeve (additional) ...	5 0 0		

THE ANNUAL MEETING HOTEL ACCOMMODATION.—The Hon. Secretary of the Association asks us to state that the Waterloo Hotel is quite full for the meeting.

NOTICE.—Owing to pressure of space, we are compelled to hold over a large amount of matter.

BOOKS RECEIVED.

REPORT ON THE EXAMINATION OF HUMAN CRANIA, by John J. R. Patrick.

The International Dental Journal, C. Ash & Sons' Quarterly Circular, The Medical Review, The Pharmaceutical Journal, The Medical Press and Circular, The Chemist and Druggist, The British Journal of Dental Science, The Dental Cosmos, The Evening Telegraph (Dundee), Medical Reprints, The Dublin Journal of Medical Science, The Dominion Dental Journal, Le Monde Dentaire, The Dental Practitioner, L'Odontologie et la Revue Internationale d'Odontologie, The Dental Record, The International Dental Journal, Correspondenzblatt für Lahuärzte, Sunday World (Dublin), The Medical Press, The Dental Journal (University, Michigan), The Texas Dental Journal, A Lecture on the Teeth, by Mr. O'Duffy, The Medical Review, The Students' Journal (Liverpool Dental Hospital), The Birmingham Medical Review, Items of Interest, The Dental Practitioner and Advertiser, The Ohio Dental Journal.

Letters and other Communications received from:—

S. Horsey, F. H. Ellwood, Horace W. Vanderpant, James F. Rymer, H. G. Ashby, W. Rushton, T. A. Goard, R. Ellwood, W. F. Mellersh, Great Northern Railway, J. Butterworth, Royal College of Surgeons (Edinburgh).

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 9.	SEPTEMBER 16, 1895.	VOL. XVI.
--------	---------------------	-----------

The Annual General Meeting.

As successful, if not more so than any of its predecessors, the recent Annual Meeting has tended to demonstrate perhaps more clearly the great value of these gatherings. Once previously the Association wended its way to Edinburgh; the pleasant memories of that meeting are no doubt fresh in the minds of those who were present, and the saying that "history repeats itself" is well confirmed by Edinburgh of 1895.

There can be but little doubt that one important side of these annual gatherings is the social one, and it was therefore most gratifying to find that extensive provisions in this direction had been made, and that the various excursions arranged proved most successful. Large companies took part in both the Forth Bridge excursion on the Thursday, and the well planned trip to Loch Lomond on Saturday, and for both of these the members were in

debted to the generous hospitality of the Scottish Branch. In connection with the various entertainments the work done by the Ladies' Committee, under the guidance of Mrs. Bowman MacLeod, must not be forgotten, and from all sides one only heard words of praise for the excellent trips arranged, and amusements provided for the ladies during the time the sterner sex were occupied with the more business-like portion of the meeting. The Association's thanks are also due to the Lord Provost and Corporation of Edinburgh for the pleasant evening spent at their invitation in the City Chambers.

The report of the Committee of Management of the Benevolent Fund, which was presented by the Hon. Secretary, Mr. Ackery, showed that the fund is in a more flourishing condition than it has hitherto been, and also that the numbers of subscribers is increasing. Such results are indeed gratifying, but it should not lead to lack of interest on the part of members, for much more could be accomplished in way of relief if the funds were greater—a condition which could be brought about if more would help; at present we regret to say that nothing like 40 per cent. of the members are subscribers to the fund.

Of the papers contributed to the meeting, that by Dr. Hewitt created most interest. He detailed some interesting facts and gave statistics, which to a great extent speak for themselves, and the readers of the Journal will have an opportunity, when the paper and discussion which followed are published, of judging how far the position he took up was maintained.

The work done by the Microscopical Section was greater than on previous occasions, and although the attendance at these meetings is naturally somewhat limited, signs are not wanting to show that microscopy is more and more interesting the members, and that the section has fully

justified its formation. The most valuable communication brought forward was a demonstration by Professor Hunter on photo-micrography, and the plan he has introduced and showed will without doubt produce quite a revolution in this valuable method of obtaining pictures of microscopical subjects.

Our new president, Mr. Bowman MacLeod, needs no words of commendation from us. His address, which was practical and interesting, and in some parts humorous, will be found on another page; and the subject raised therein on the question of a clinical chair in dental surgery is worthy of the attention of those in whose hands lie the training of the future dentist.

Viewed from all points the gathering was a distinct success, and our thanks are due to the various local committees, and also to our Honorary Secretary, Mr. Paterson, who seems to possess in no small degree the qualities of a good organiser.

ASSOCIATION INTELLIGENCE.

The Annual General Meeting.

THE Annual Meeting of the Association was held on August 29, 30, and 31, in Edinburgh, and was attended by a very large number of members. The head quarters of the Association were fixed at the Waterloo Hotel, the meeting being held in the Edinburgh University Buildings, which had been placed at the disposal of the Association.

The following members signed the attendance book during the meeting:—

Ackery, J., London.
Amoore, John S., Edinburgh.
Anderson, W. D., Dublin.
Andrew, John J., Belfast.
Apperson, James F., Birmingham.

Bacon, W. B., Tunbridge Wells.
Badcock, J. Harry, London.
Baines, Arthur, Hanley.
Baker, A. W. W., Dublin.
Baldwin, Harry, London.
Ball, A. E., Bournemouth.

Bell, Frank, Tunbridge Wells.
 Bellamy, F. A., London.
 Bennett, Storer, London.
 Betts, E. G., London.
 Biggs, J. A., Glasgow.
 Birch, J. Charters, Leeds.
 Bishop, S. J., Dublin.
 Booth, R. B., Crewe.
 Bradbury, E. A., Huddersfield.
 Briault, E. H. L., London.
 Brown, Ed., Barnstaple.
 Brunton, G., Leeds.

Cameron, D. R., Glasgow.
 Campbell, W., Dundee.
 Campbell, D. Robertson, Edinburgh.
 Canton, F., London.
 Capon, R. M., Liverpool.
 Clegg, Joseph E., Douglas.
 Cocker, Alf., Sowerby Bridge.
 Cocker, Arthur, Halifax.
 Cole, J. Fenn, Ipswich.
 Collett, Edw. P., Manchester.
 Colyer, J. F., London.
 Corbett, D., jun., Dublin.
 Coxon, S. A. T., Wisbech.
 Cumine, R. H., London.
 Cunningham, George, Cambridge.

Daish, W. G., Isle of Wight.
 Dall, William, Glasgow.
 Dent, J. W., Stockton-on-Tees.
 Dunlop, John, Kilmarnock.
 Dykes, Thomas, Bank House, Dumfries.
 Dykes, William, Bowden, Cheshire.

Egan, L. J., Cork.
 Elliott, W. T., Birmingham.

Finlayson, A. K., Edinburgh.
 Fisher, W. M., Dundee.
 Fisk, W. J., Watford.
 Fothergill, J. A., Darlington.

Gillett, R. W., Weymouth.
 Girdwood, John, Edinburgh.
 Glaisby, Walter, York.
 Goodman, Edwin, Taunton.
 Grove, H. N., Walsall.

Hall-Jessop, E. C., Oxford.
 Harding, W. E., Shrewsbury.
 Hare, G. F., Limerick.
 Harrison, Walter, Brighton.
 Helyar, W., Clifton.
 Hepburn, R., London.
 Hern, W., London.
 Heron, Arthur, Elgin.
 Hope, W. H., Wellingborough.
 Hopson, M. F., London.

Jameson, J. T., Newcastle.
 Jeffrey, Louis, London.
 Jones, Alfred, Cambridge.
 Jones, John Henry, Sale.

Kekwick, John, Carlisle.
 Knowles, Vernon, Reading.

Large, C. W., London.
 Lee, Josiah, Bradford.
 Lewes, E. A., London.
 Lipscomb, J. Moore, Kilmarnock.
 Lodge, George H., Rotherham.

MacGregor, M., Edinburgh.
 Mackenzie, F. V., London.
 MacLeod, W. B., Edinburgh.
 Maden, W. H., Rawtenstall.
 Martin, W. F., Glasgow.
 Mason, W. J., Carlisle.
 Matheson, L., London.
 Matthews, A. A., Bradford.
 McAdam, G. C., Hereford.
 McCall, J. H., Leicester.
 McCash, James M., Glasgow.
 Mechan, A. R., Dundee.
 Minshall, F. W., Manchester.
 Mitchell, Samuel, Dewsbury.
 Moore, G. P., Dublin.
 Mountford, J., Birmingham.
 Mummery, J. Howard, London.
 Munro, J. G., Edinburgh.
 Murray, G. M. P., Dublin.

Nash, T. L., Inverness.
 Naylor, J. C., Leeds.
 Neale, W. H. Breward, Birmingham.

O'Meehan, Patrick, Limerick.

Page, Fredk., Edinburgh.
 Paterson, W. B., London.

Peall, F. S., London.
 Pedley, G., London.
 Planck, Henry, Manchester.
 Price, Rees, Glasgow.

Quinby, H. C., Liverpool.

Rankin, J. R., Sunderland.
 Read, L., London.
 Read, T., London.
 Reeves, Samuel George, Dublin.
 Renshaw, Isaac, Rochdale.
 Rhodes, W. A., Cambridge.
 Richards, F. W., Birmingham.
 Richards, G. O., Richmond,
 Surrey.
 Ripon, Charles, Dewsbury.
 Ritchie, T. P., Bristol.
 Robbins, C., London.
 Rose, Harry, London.
 Routledge, W. G., Newcastle-on-
 Tyne.
 Rowney, T. W. F., Derby.
 Rymer, S. Lee, Croydon.

Sanders, J. J. H., Barnstaple.
 Smith, A., London.
 Smith, Arthur Hopewell, Boston.
 Somerville-Woodiwis, W., West
 Hartlepool.
 Spokes, Sidney, London.
 Stirling, J., Ayr, N.B.
 Stokoe, J. Clarke, Newry.
 Storey, J. C., Hull.
 Sutcliffe, C. F., South Shields.

Tait, Thos. A., Tenterden.
 Tanner, Thomas, Manchester.

Taylor, James, Dewsbury.
 Taylor, William, Batley.
 Thacker, J. W., Dublin.
 Thomson, G., Torquay.
 Thomson, J. S., Dublin.
 Trollope, W. T., Tunbridge
 Wells.
 Tucker, J. S., Dublin.
 Turnbull, F. J., Edinburgh.
 Turnbull, R. A., Newcastle-on-
 Tyne.
 Turner, J. Smith, London.

Van der Pant, F. J., Kingston-
 on-Thames.
 Vice, W. A., Leicester.

Waite, W. H., Liverpool.
 Walker, J., London.
 Walker, P. S., Dundee.
 Watson, G. W., Edinburgh.
 Watt, J. Ross, Leamington.
 Whittaker, G. O., Manchester.
 White, Alexander, Glasgow.
 Williams, Herbert, Londonderry.
 Williamson, William Herbert,
 Aberdeen.
 Wilson, J. A., Bangor.
 Wolfenden, Arthur B., Halifax.
 Wood, John, Brighton.
 Woodhouse, R. H., London.
 Woodward, Roger, Radcliffe.
 Wylie, W. D., Glasgow.

Yates, S. G., Ross, Hereford-
 shire.

The following visitors were also present :—Rev. R. Cuffe (Liverpool), Messrs. L. Dupan (Leeds), J. E. Grevers (Amsterdam, Netherlands), Wm. Haigh (Sowerby Bridge), A. Mitchell (Dewsbury), S. Wilson (Liverpool), R. Keith Common (Stirling), F. Wilson (Bangor), M. Williamson (Aberdeen), Albin Lenhardtson (Stockholm, Sweden), John Wessler (Stockholm, Sweden), Hugh Love (London), Miss Lilian Murray, L.D.S. Edin. (London).

Wednesday, August 28.

On Wednesday evening the members were received at the Waterloo Hotel by the Scottish Branch and Mr. Bowman MacLeod, the President. After the reception a smoking concert was held, at which some excellent music was rendered by the Edinburgh Harmonists, and a clever exhibition of Highland dancing was given by Mr. James Lindsay, junr., Pipe-Major MacDonald, Janitor of the Edinburgh Dental Hospital, handling the pipes. The "harmony" was well sustained by volunteers, and a very enjoyable evening spent.

Thursday, August 29.

Meeting of the Representative Board.

THE Representative Board met in the Court Room of the University, Mr. W. H. Breward Neale, Vice-President, in the chair. The members present were Messrs. E. G. Betts (Treasurer), W. B. Paterson (Hon. Secretary), J. Smith Turner, D. Hepburn, R. H. Woodhouse, Storer Bennett, L. Matheson, W. Hern, J. Ackery, Lawrence Read, Sidney Spokes, Dr. J. Walker (London); W. B. Macleod, J. G. Munro (Edinburgh); Rees Price (Glasgow); R. P. Lennox, W. A. Rhodes, G. Cunningham (Cambridge); D. Corbett, junr., Dr. Baker (Dublin); W. E. Harding (Shrewsbury); A. A. Matthews (Bradford); G. Brunton (Leeds); J. C. Storey (Hull); I. Renshaw (Rochdale); J. J. H. Sanders (Barnstaple).

Letters regretting inability to attend were received from S. J. Hutchinson (London); Col. Rogers (Cheltenham); Alexander Kirby (Bedford); J. Dennant (Ergington); and Dr. John Smith (Edinburgh).

The Treasurer's Report was taken as read and approved.

The Hon. Secretary's Report was taken as read and approved.

The Report of the Committee on the Investigation of the Teeth of School Children was not presented, it being stated that it had not yet received final revision.

The CHAIRMAN asked if members wished to express any opinion upon the resolution to be brought before the Annual

Meeting by the Scottish Board *re* alteration of Bye-law XV., and particularly if the Scottish Branch desired the Board's opinion.

Mr. REES PRICE thought it might be desirable to ascertain the views of the Board on the subject.

The HON. SECRETARY said the notice was received after the last Board meeting, but it had been before the Business Committee, and they suggested that, as under the circumstances, the matter was certain to come before the general meeting, their opinion need not be given until asked for. They did not approve of the deletion of the words "presidents and hon. secretaries." He had received letters from Mr. Hutchinson and Mr. Dennant, who, whatever modification the bye-law might undergo, strongly urged the retention of the Branch hon. secretaries, seeing that the knowledge which they acquired of the interior working of the Association must necessarily increase their helpfulness and efficiency to the Branches, whilst the continuity of their membership, amidst the constant changes in the membership of the Board, would not fail to be valuable to the Association.

Dr. WALKER expressed his concurrence with the views of Mr. Dennant and Mr. Hutchinson.

Mr. SIDNEY SPOKES said as the matter was coming before the Annual Meeting the Board could not come to any decision on it.

Mr. BREWARD NEALE said the Board had really nothing to do with it. He was sorry, however, that it had not first been discussed at the Board, so that the opinion of the Executive might have been ascertained.

The CHAIRMAN stated that by the bye-law the next Annual Meeting must be held in London. The question now to be considered was the time of the meeting.

Mr. HARDING proposed that the meeting be held some time in April—the spring months were more convenient to some of the members than August. The meetings at Birmingham and Newcastle, which were very successful, were held in the spring.

Dr. BAKER seconded.

Mr. CUNNINGHAM said this question was one seriously affecting the London men, and as the convenience of the Scottish Branch had been consulted in fixing the present

meeting in August, so he thought the convenience of their London friends should be consulted with reference to the time of meeting. Perhaps Mr. Paterson could state the wishes of the London members.

Mr. PATERSON said the Examination Hall was the one place in London that suited such meetings more than any other. The Hall was occupied during the spring with examinations of all kinds, but during August no examinations took place, and the whole building doubtless would be at their disposal. With regard to hotel arrangements, August was also a better month than April or May. The chief matter, however, was as to the rooms for the meeting. The Examination Hall could be got in August, whereas if they looked elsewhere they might have to pay a large sum.

Mr. J. SMITH TURNER said no doubt they could not hold a meeting of the Association without some self-sacrifice somewhere. April and May were very busy months in London, and with regard to the Medical Schools, the spring vacations were very short, and were always required for cleaning purposes. He knew no time that would suit London so well as August.

Mr. R. WOODHOUSE thought it was rather a pity to oscillate between an interval of seven months and seventeen. An exception was made at Birmingham, and it was justified, no doubt, by its great success. That, however, need not be taken as a precedent, because no doubt the August meeting would best meet the convenience of the London men. He thought the first week would be the best time. He was sorry to find he could not support Mr. Harding's resolution, but if the general opinion were in favour of the spring, the London members would be quite willing to give way.

The CHAIRMAN said the reason the time was changed in Birmingham was simply because Mason's College was only available during that particular Easter week.

Mr. HARDING said he should be very pleased to withdraw his proposition if it was the general wish of the London men that the meeting should be in August.

Mr. SMITH TURNER said it was not the wish of the London men but the convenience of the Association that they had to consider.

Mr. CUNNINGHAM then moved, and Mr. BRUNTON seconded,

that the meeting in London should be held in August, the exact dates to be fixed by the Representative Board.

This was agreed to.

The question of nomination of President was then considered, and it was eventually decided to nominate Mr. Frederick Canton as President-elect.

An election of members to the Association then took place. This concluded the business.

THE GENERAL MEETING.

The General Meeting was held in the Celtic and History Lecture Hall. The chair was taken in the first instance by Mr. J. Smith Turner (Vice-president).

Mr. SMITH TURNER said their President, Mr. C. S. Tomes, was not with them, and he was sure they were all of one mind in regretting the circumstances that had kept him away. He need not enlarge upon that, but as they all knew, Sir John Tomes was a gentleman of great individuality, and Mr. Charles Tomes, as the only member of the family, considered that his place was with his widowed mother rather than here. Mr. Tomes, however, had not forgotten some of his obligations as their retiring President, and had sent a short address which he (Mr. Smith Turner) would now read. [The address will be found among our Original Communications.] After reading the address Mr. Smith Turner said that it was only their duty—he might almost say their privilege—to accord to Mr. Charles Tomes a hearty vote of thanks for his services to the Association as its President during the past year, and also to the whole profession, and to science.

The resolution was carried by acclamation.

Mr. J. SMITH TURNER then inducted to the chair the new President, Mr. Bowman MacLeod, who took the chair amid loud applause.

The PRESIDENT then delivered his Inaugural Address (which we print as an Original Communication).

Mr. BREWARD NEALE, in moving a vote of thanks to Mr. MacLeod for his able and interesting address, said he was sure all members present felt very much indebted to their President for the ability and versatility he had shown in the preparation

of that address. It was worthy of Edinburgh, and that was saying a great deal. Here they were surrounded by all the best traditions of the medical profession, and in Mr. MacLeod they had a very excellent President, and also a very excellent producer of pabulum—not metallic, as he had suggested—for their thoughts. Their President had touched upon the great loss they had sustained in the death of Sir John Tomes. There was only one thing he would add, and that was, that even his death, if it were looked at in the right light, would bring a blessing. To look back upon Sir John Tomes's life must be to all of them a very great pleasure, something to stimulate them for the future to live their lives as they should live them, and with his great example before them, although, as their President said, it was a shadow, at the same time it was also a light. He had great pleasure in proposing a hearty vote of thanks to Mr. MacLeod, and in asking his friend Mr. Campbell, of Dundee, to second it.

Mr. CAMPBELL said he had known Mr. MacLeod all the days of his dental career, and had watched, as many present had done, the steady way in which he had gone up the dental ladder, until he had now reached the very top step. First he was appointed, and very wisely so, by the College of Surgeons as Lecturer in Dental Prosthetics; then he became Secretary, and he was sure no other Secretary who succeeded him would grudge the remark, he was the very best Secretary the Odonto-Chirurgical Society ever had. He then became President of that Society, and President of the Scottish Branch, and now we see him on the topmost pinnacle of all as President of the British Dental Association. Mr. MacLeod was, as they all knew, a man of extreme energy, and how his energy was to be spent after he ceased to be President of that great Association he did not very well know. Most likely by the time the Association came back to Edinburgh they would find him Lord Provost—an office which he would fill with dignity. After that he would, in all probability, turn his energies towards endowing the chair he had referred to as being so indispensable, and more than that, he would succeed in doing it. Without a man like Mr. MacLeod they would not have had the kind of dental school they were privileged to have in that city. He had great pleasure in seconding the resolution.

Mr. WAITE said the resolution had been so well proposed and seconded that he would content himself with heartily endorsing the graceful and complimentary remarks which had already been made.

The resolution was carried by acclamation.

The PRESIDENT, in responding, said he wished again to welcome the Association in the name of the Scottish Branch, and to assure them that every member of the Branch was anxious to do all in his power to promote their enjoyment and comfort.

THE LATE SIR JOHN TOMES.

Mr. ROBERT HEPBURN said he had been called upon most unexpectedly to propose a resolution. He could not say that he did so with a great deal of pleasure, but what was wanting in pleasure was made up by strong feelings of affection, he might say, for the lady to whom the vote referred. With regard to their late friend, Sir John Tomes, it was unnecessary to speak; they all knew him and the good work he had done for the profession. He was sure the members of the Association would feel that under the circumstances they could not do less than propose a vote of condolence to Lady Tomes in her sad bereavement. He begged to propose that such a vote should be forwarded to the widow of their old friend. The motion did not require a seconder.

The resolution was carried by a silent vote, and the Hon. Secretary was directed to communicate the Association's wish to Lady Tomes.

The PRESIDENT said they were honoured by the presence of the Principal of the Edinburgh University—Sir William Muir.

Sir WILLIAM MUIR, who was received with hearty applause, said he only wished in one word to say how glad the University was to welcome the Association. He was very sorry that he was unaccompanied, but every one else connected with the University had gone away to the country. He was himself leaving immediately, but he wished to say how glad they were to give the Dental Association any facility in their power. He recognised no other faculty that was of greater service to humanity than the dental faculty. In matters of

the prevention of disease it yielded to no other possible faculty represented in the University. He therefore welcomed them, and was very glad to see them there.

TREASURER'S REPORT.

The PRESIDENT said since the last Annual Meeting, the then Treasurer, Mr. Woodruff, had resigned. The Representative Board had elected an interim Treasurer in the person of Mr. Betts, and the Association was now asked to confirm their selection.

Carried by acclamation.

Mr. BETTS then read his report :—

MR. PRESIDENT AND GENTLEMEN,—In introducing this my first report, allow me to thank you most sincerely for the honour you have done me in electing me to this, as I feel it, important and responsible post. I am sensible that, in succeeding so exceptionally able and assiduous an officer as our late treasurer, Mr. W. H. Woodruff, I must necessarily stand at some disadvantage, but I trust I shall, so long as I hold the office, at all times endeavour to merit the confidence reposed in me, and fulfil its duties to the best of my ability, always bearing in mind to keep a light but firm hand upon the purse strings, that most essential duty of all good treasurers.

The disparity of interval in point of time, between the holding of the present annual general meeting and that of last year, makes it so difficult to compare figures as regards finances, that I shall revert to comparison of the balance sheet of 1894 with that of 1893, as being a safer indication of the position of things.

In this one sees every reason for mutual congratulation.

In the first place, the item of legal expenses in 1894 is far larger—£136 more than in 1893. This, I think, you will agree—at least many of you will—considering the success that has in all cases attended our arms, and the good results we may expect therefrom, is a satisfactory fact.

In the next place, and this will doubtless gratify everyone, every other large item of expenditure is distinctly less than in 1893, showing on the expenses of the annual meeting a saving of £66, on stationery, printing, &c., of £97 1s. 4d., on reporting of meetings of £16, and on the Journal account of £109. This latter is especially a subject for congratulation, the total deficit on the Journal account for last year being only £44 7s. 9d., as compared with one of £178 19s. 1d. the previous year. I trust the time is not far distant when we shall see our Journal self-supporting.

The condition of our Association during the past seventeen months has been one of progress. Our deposit account at the bankers, which at the commencement of that period was £400, is now £800. With the exception of current legal expenses and a few slighter items we are free from debt, and have a balance in the current account of £333 12s. 5d.

We have during the past seventeen months received 90 new members, and our total number of members at the time of drawing up this report was 896 (it is probably ere this a round 100). Of these 40 are in arrears for two years and 213 for one year, making a total sum due to the Association of £307 13s.

I regret to have to report the removal of 15 names from our list of members at the beginning of the present year for non-payment of their subscriptions, but sincerely hope that some, if not all of them, may yet see their way to pay up and rejoin us.

Since last annual meeting, again be it remembered, a period of seventeen months, we have lost 13 members by resignation and 10 by death. In the latter respect the present must for ever remain a dark year in the annals of our Association. Gentlemen, the world at large is the poorer to-day for the loss of Sir John Tomes; how infinitely poorer we of the dental profession! Let us one and all rally round the standard of our fallen leader, and if we cannot equal him in sagacity and farsightedness, by reflecting in some degree his bright example of unswerving uprightness and devotion to duty, do our mite to carry forward that good work of which he has been the pioneer and founder.

SECRETARY'S REPORT.

MR. W. B. PATERSON, Hon. Secretary, read the following report :—

MR. PRESIDENT AND GENTLEMEN,—In presenting the usual annual report of the business of the Association, it is my duty to inform you that the Representative Board has met on six occasions, and the Business Committee on eleven, since the last Annual General Meeting in 1894. The exceptional inclemency of the weather during the last winter tended to diminish the number of the meetings of your Executive, but, notwithstanding this, the quality and quantity of the business done will, I think, amply compensate us for the paucity of the meetings.

We have to report to you the following interesting legal cases, all of which have been successfully undertaken by the Association since last we met, and you will observe, as they are related to you, that they all bear distinctive features, and in the majority they elucidate in a fresh way the meaning of Section 3 of the Dentists Act, and show that the phrase—"Any name, title, addition or description implying

that he is registered under this Act or that he is a person specially qualified to practise dentistry"—has a wider range of meaning than has hitherto been attributed to it.

In the first case the use of the word "dentorium" was effectively challenged, and the person using it was condemned by the Stipendiary Magistrate in a fine and costs.

The second case was a conviction on grounds that had previously been gone over, more or less, in the Plymouth case, viz., the use of the words "Dental Surgery," but unlike that case there was no name of a person used directly in connection with the words in question; and evidence had to be laid that a certain unregistered person was practising and using these words as his sign or description.

The third case was of the ordinary type, viz., the use of the word "dentist" by an unregistered person, both on circulars and on a door mat. Here, again, we were successful.

The fourth case, although similar to the last, was of rather a more refined character. It was the use of the word "dentist" on an ordinary visiting card. This case, which was successful, had a special interest to us, inasmuch as it was the first prosecution of its kind in Ireland by the Association.

The fifth case, more attenuated as to facts than the preceding ones, presented to us one leading feature only, viz., the use of the word "Surgery," by an unregistered person. This and the next case, viz., the sixth, in which the use of the words "dental surgery" was associated with the name of a person, were both tried in the same town. The defendants pleaded guilty, and although the local bias was apparently greatly in their favour, the bench had to acknowledge the force of the law, and inflicted fines.

In a summary like the present, it is not possible to enter into the details of these cases, and, moreover, it is unnecessary, as they have already been reported fully in our Journal; but it will be seen, by anyone who will study them, that gradually the different phases of meaning involved in the expressions used in Section 3 of the Dentists Act are being clearly established and duly recognised in legal practice.

The cases that have been disposed of without prosecution are likewise six in number. Though they may not appear so important in the eyes of the members of the Association, it is satisfactory to think that they have been disposed of by your Executive, at the cost of a little more labour, perhaps, but of much less expenditure of money; for it must not be forgotten that the average cost of successful prosecutions is about £25 each, and that we get very little back in the shape of fines and costs to mitigate this expense, as matters at present stand under our Act.

It will be seen from the nature of the cases detailed, that we are fulfilling, with a fair amount of success, the object of prosecutions, for

at present they are undertaken, not so much in the expectation of arresting the evil of illegitimate practice, but rather with the view of establishing the meaning of our Act of Parliament, and thereby gathering experience and power to grapple with the evil in a more extensive and efficient way at a not distant future. Our experience of the extended definition of the meaning of Section 3, is of such very recent growth, that the probabilities are we shall yet find the Dentists Act stronger in its protection of the public than many have hitherto supposed.

From the foregoing it will also be obvious that there are certain common infringements of the Dentists Act capable of being taken up at once by the British Dental Association and dealt with promptly ; always provided that we are afforded reliable and proper evidence to go upon ; but all test cases must be approached with the utmost circumspection, and therefore we have to ask our members to be considerate and patient in their expectations. There is, however, a class of dental practitioners to whom we cannot thus address ourselves ; we having no sympathy with them, nor they with us. We are constantly importuned by men who are not members of our Association, to enforce the provisions of the Dentists Act, and it is noteworthy that from these complainants the strongest expressions of dissatisfaction concerning the so-called dilatory procedure of the Executive are received. On examining their cases it is not uncommonly found that there is little to choose between the complainant and the complained of, and the difference in favour of the complainant chiefly exists in his own imagination.

When these selected test cases have resulted in the accumulation of a number of valuable precedents sufficient to establish the law and its practice, the question will, no doubt, come before the association, as to how far branches may take up prosecutions, if they have a mind to ; but, as there is now no legal obstacle to prevent any private person instituting proceedings, the question is scarcely one of very great urgency. In the event, however, of its arising, we shall have better grounds to discuss it than we have hitherto had.

The next matter I have to allude to, is one of a more delicate character than those already mentioned. It is the question of "covering." This question appeals to us all, for "covering" is a fruitful source of imposition and injury to the general public. It will have to be approached with the same amount of care which has characterised our previous conduct of affairs ; and in the next Annual Report it is hoped that we may be able to give a satisfactory account of our doings. At present, reticence is our best policy.

With regard to any contemplated alteration in the Medical Act, your Executive have tried, and are still trying, to obtain for the dental profession any help that may be afforded by additional legislation, without sacrificing any of the provisions we now have, and the

value of which we are slowly but surely realising. It is a difficult matter to make hard-and-fast restrictions of any permanent value, in a profession like ours, by Act of Parliament. We, in this country, enjoy an amount of freedom which is denied to the residents under other governments, and we are bound to proceed with caution in endeavouring to secure measures which may curtail, or even appear to curtail, this personal freedom. The present prospects of medical legislation are somewhat obscure, nevertheless, we are fully alive to the importance of watching for the slightest indication of a movement forward in a direction favourable to our profession's interests.

The question of direct dental representation on the General Medical Council has received careful attention at the hands of the Representative Board and Business Committee. It must be admitted that our progress in this matter has not yet realised the expectations of the more sanguine amongst us ; but like all important movements, it will have to be carried on with determination and discretion. The claim of the dental profession for such representation has been, and is now, before the Privy Council, and we hope that justice may be done us in this matter at the earliest opportunity arising. Should it be ever necessary to take other steps to obtain a proper recognition of the profession's reasonable demands, it is to be hoped that the members of the British Dental Association will, at the call of the executive, act with promptness and unanimity in their respective spheres of influence to that end.

With regard to the maintenance of the principles and rules of conduct of the British Dental Association, we have only had in two instances to insist upon the alternative of resignation or compliance with our bye-laws. In both cases we have to report that resignation has been the course chosen.

It is satisfactory to report that our action in bringing the matter of the three years' apprenticeship in mechanical dentistry before the General Medical Council has resulted in the Irish College of Surgeons acknowledging, not only the legality, but the importance of this condition, and in returning to its original requirements from candidates for its diploma. A gratifying result may be attributed to this question of apprenticeship having been raised by the Irish College, viz., the appointment of Mr. C. S. Tomes by the General Medical Council, as an Assessor, to visit the various dental examination boards throughout the kingdom when in action.

The practice of medical men giving anæsthetics for unqualified dental practitioners has been successfully taken up by several of our branches, and the medical press has consistently condemned the conduct as unprofessional. It is to be hoped that the Society of Anæsthetists may see their way to taking up the question and pronouncing an opinion upon it.

The committee for the collective investigation of the teeth of

children in our national schools is still at work, and their report will be laid before you. This investigation, if properly followed up, is one of the forces of the Association, which, though working in silence, will tend more to forward the Association's reputation in public estimation than perhaps any other influence we have at our disposal.

The question of an International Dental Congress in connection with the next meeting of the British Dental Association in London in 1896 was considered by the Representative Board and the Business Committee, and it was deemed undesirable to entertain the international project on that occasion.

Your Executive regretfully report the resignation of the office of Vice-president of the Representative Board by Mr. Booth Pearsall, and of Treasurer of the Association by Mr. Woodruff. The former gentleman has been replaced by Mr. Breward Neale and the latter by Mr. Betts.

We regret that the death of one of our Vice-presidents, Sir John Tomes, has to find a place in this report. There is no successor to be found to fill his place.

The union of the Scottish and West of Scotland Branches is the last incident to be chronicled in this report. The management of the branches of the Association is wisely left, in all matters of detail, to the branches, and we can but hope, as we believe, that results will be as satisfactory as the promoters of the movement have anticipated.

On the motion of Mr. REES PRICE, seconded by Mr. LEE RYMER, J.P., the Treasurer's and Secretary's Reports were adopted.

ANNUAL MEETING, 1896.

Mr. BREWARD NEALE, as Vice-president of the Representative Board, reported that the Board recommended that the London meeting be held in August, leaving it to the executive to arrange what appeared to be the best time when the whole of the facts were before them. Probably the first week in August would be found most convenient, but it was suggested by the Board that they should recommend merely the month of August. They also recommended that Mr. Frederick Canton, who had done so much excellent work for the Association as its Secretary, Treasurer, and as Chairman of the Representative Board, should be President-elect. The place of meeting was settled by the Bye-laws, and the recommendations of the Board were simply as to the time of meeting, and the President. He moved the adoption of the

Report, viz., that the meeting be held in August, and that Mr. Canton be elected as President.

Mr. SOMERVILLE WOODIWISS seconded. He was glad that August was selected, and congratulated the Board upon their nomination of Mr. Canton as President.

The motion was agreed to.

Mr. J. H. MUMMERY, as President of the Microscopical Section, delivered his address (which will appear in a future number of the Journal).

- On the motion of Mr. ANDREW WILSON, seconded by Mr. G. W. WATSON, a hearty vote of thanks was accorded to Mr. Mummery for his able and instructive address.

Mr. CUNNINGHAM presented the Fifth Report of the Schools Committee on the Teeth of Children in National Schools (to be published in a future issue).

On the motion of the PRESIDENT the Report was received and adopted.

ALTERATION OF BYE-LAW XV.

Mr. REES PRICE said as an Hon. Secretary of the Scottish Branch, he had been asked to bring forward the alteration in the Bye-law, of which notice had been given. This suggested alteration was passed at a practically unanimous meeting of the Branch held in the summer. As they knew, in the old days, nominations for the Representative Board were made at the annual meetings, and were voted upon at those meetings. Three or four years ago an alteration was made by which ballot papers were sent out, and last year this was made a Bye-law. The result was found to be this, that when the ballot papers were sent out through the whole of the Association, the nominations of Branches in many instances had practically had no results. When a branch made a nomination, it did so with the knowledge that the man so nominated was a desirable man as far as that Branch was concerned, even though he might be unknown elsewhere. At one time the Scottish Branch was without a direct representative on the Board, simply because through the ballot its nominated members were not fortunate enough to be elected. The Scottish Branch, in bringing forward this suggested alteration, had no wish to unduly press the matter, and if the majority of the Association were

against it there was, of course, an end to it. It had been suggested that time might possibly be saved if the matter were sent down to the Branches for their consideration, to be reported upon at the next annual meeting. In that way the views of the Association might be ascertained. He moved that the words "and the President and the Hon. Secretary, for the time being, of each Branch of the Association" be deleted from the Bye-laws and the following words substituted: "and two members from each branch of the Association, who shall be elected at the annual meeting of the branch they represent, and shall serve on the Board for the ensuing year, and shall be eligible for annual re-election."

The PRESIDENT said he should be happy to support the resolution if it provided that this resolution of the Scottish Branch should be remitted to the consideration of all the Branches to report upon it at the next annual meeting. No doubt it was a question that required consideration, and in that way they would be able to arrive at a solution of the difficulty.

Mr. T. C. NAYLOR understood that the resolution was moved in the form in which the notice had been given. If not, then he would move the original resolution as an amendment. He saw a good deal of force in the resolution as printed on the agenda, and thought it would be well to test the feeling of the Association.

The PRESIDENT said if it were to be remitted it should not be now discussed.

Mr. REES PRICE said he would move the resolution as it stood on the paper.

Mr. J. S. AMOORE seconded.

Mr. A. A. MATTHEWS moved as an amendment that the question be referred to the Branches for their consideration to report upon at the next annual meeting.

Mr. RENSHAW seconded the amendment.

Mr. CUNNINGHAM said he was in favour of remitting the matter, but not in the form suggested by the amendment. He wished the opinion of the Branches to be ascertained, but if the matter were remitted to them direct they would be just about as far forward as at present. The better way would, he suggested, be to remit the question to the Board—not only Bye-law 15 but all the other Bye-laws bearing upon it—and

for them to invite the opinion of the Branches, and get that opinion within a definite time. The Board could then draw up a report with such alterations of the Bye-laws as seem best to meet the views of the Branches, and submit them for approval at the next annual meeting. He moved as an amendment that the question be referred to the Representative Board for them to take the opinion of the Branches and report.

Mr. ALF. COCKER seconded.

The amendment moved by Mr. Cunningham was then put and carried by 24 votes to 3.

The PRESIDENT reported as the result of the ballot for the Representative Board that the following members had been elected:—

Mr. C. S. Tomes.	Mr. J. S. Amoores.
Mr. W. H. Woodruff.	Mr. C. Rees Price.
Mr. J. T. Browne Mason.	Mr. A. Hopewell Smith.
Mr. Frank Harrison.	Mr. J. A. Biggs.
Mr. Amos Kirby.	Mr. Alex. Kirby.

On the motion of Mr. CAMPBELL, seconded by Mr. D. HEADRIDGE, the Committee of Literary Referees was reappointed.

Thursday afternoon.

Papers were read on "Electricity in Dentistry" by H. B. Ezard and W. Bryson; on "A Method of obtaining a Plaster Model as good as the Mouth, with a View to Crowning one or more of the Anterior Teeth," by Mr. R. P. Lennox (Cambridge); and on "An Enquiry into the Safety and Sphere of Applicability of Chloroform as an Anæsthetic in Dental Surgery," by Dr. Fred Hewitt (London). These papers will appear in future numbers of the Journal.

EXCURSION TO THE FORTH BRIDGE.

The invitation of the Scottish Branch given to members and the ladies accompanying them to an excursion to view the Forth Bridge was largely responded to, and a party of about 400 ladies and gentlemen left Waverley Station at 4.30 p.m. by special train to North Queensferry, passing over the noted bridge. They there alighted and went on board the steamer, which conveyed them across the Forth to Dalmeny, affording a splendid view. The return journey was made by train from Dalmeny, Edinburgh being reached in time for dinner.

The excursion, although the weather was somewhat unfavourable, was very highly appreciated by the large company who accepted the kind invitation of the Scottish Branch.

CONVERSAZIONE IN THE CITY CHAMBERS.

In the evening the Lord Provost, Magistrates, and Town Council of Edinburgh gave a conversazione in the City Chambers on the occasion of the visit of the Association to Edinburgh. The invitation of the Corporation was very largely responded to, and the Municipal Buildings, which were tastefully decked with flowers and plants, presented a very gay appearance during the evening. The guests as they arrived were received in the Council Chamber by Lord Provost M'Donald, who was supported by Bailies Macpherson, and Pollard, Dean of Guild Miller, Mr. Hunter, the town-clerk, Mr. Paton, the City Chamberlain, and a number of the Councillors. The Corporation Museum was open for the inspection of the company, and Mr. Ferguson, the custodian, gave interesting information to the guests about the notable articles in the collection. Councillor J. C. Dunlop, who was at the head of the committee charged with the arrangements, had seen that adequate accommodation was available for the large party, and the company had not only the council chamber and the museum but several of the committee rooms and other apartments in the building at their disposal. After the guests had been received by the Lord Provost, who was attended by Mr. James Russell, the Chief City Officer, and the sword and mace bearers and halberdiers, they were entertained to a fine selection of music by Mr. Dambmann's orchestra in the council chamber, and by Mr. Moonie's Male Voice Choir there and in the large committee room.

By means of arrangements made by the local Ladies' Committee, at the head of which was Mrs. Bowman MacLeod, the lady friends of members spent the time very pleasantly during the day. In the forenoon a numerous party of them visited the Castle and Holyrood Palace, after which they proceeded to St. Giles. In the afternoon they partook of tea in the handsome rooms of Messrs. Jenner & Company, Princes Street, and later in the day the party visited the Forth Bridge.

Friday, August 30.

The Benevolent Fund.

THE annual meeting of the subscribers and friends of the Dental Benevolent Fund was held on Friday morning, August 30, in the Court Room of the University. Mr. S. L. RYMER, J.P., presided.

The Minutes of the previous meeting were read and confirmed.

The CHAIRMAN said the report of the Treasurer, Mr. Alfred J. Woodhouse, had not been received, owing to his absence in Switzerland. The accounts were made up to Christmas last, and were published in the Journal, so that members were generally acquainted with the state of affairs, which, on the whole, were tolerably satisfactory. Had the Treasurer been able to send in the report, no doubt they would have had a statement up to the present time, but that would come in due course.

The HON. SEC. (Mr. J. Ackery) read the report of the Committee:—

GENTLEMEN,—Your Committee beg to submit to the subscribers and contributors to the Benevolent Fund of the British Dental Association their twelfth report, covering a period of fifteen months, viz., from March, 1894, to June, 1895. A list of subscribers and donors has been prepared and is open for inspection. From this it will be seen that the number of contributors has considerably increased. This is, in part, due to the circulation in February last of an appeal addressed only to *non-subscribing members* of the *British Dental Association*. At that date only about 30 per cent. of the members of the Association were annual subscribers to the Benevolent Fund, and of the 570 thus addressed some 60 contributed, and with but few exceptions became *annual subscribers*. Messrs. Hutchinson, Maggs, J. F. Colyer and the Hon. Secretary supplemented this appeal by writing personal letters to about 130 of those members who were well known to them, and of the 60 new subscriptions obtained, 50 may be traced to this *special* effort.

Your Committee, in reviewing this result, are struck with the great success attending *personal* endeavours, and they would encourage those in various centres who have the good of the cause at heart to approach those friends less known to the executive, who of necessity are mostly London men.

The cost of the appeal was under £6, and the amount realised £65, of which about £50 will come in *annually*, so that though the percentage of subscribers is not so materially increased as might be desired, the advance made is greater than would at first sight appear.

There are at present twelve *old cases* receiving help, viz. :—

Three dentists, all aged and infirm, two of whom receive small grants averaging 6s. 3d. a week, and one a grant towards rent.

Four widows are being similarly provided for.

One youth is studying for the L.D.S., and his widowed mother receives £26 per annum towards his maintenance.

Two lads (same family) are in an orphanage at a cost of £36 per annum.

Four girls (two in one family) are at school at a total cost of £78 per annum, or at an average of under £20 per annum.

Eight old cases have passed out of hand. In four, grants have been discontinued as unnecessary.

Three were young persons, who having been educated and trained in various capacities, are now earning enough to support themselves.

(1) A dentist has been admitted to a sick home *for life*.

In one very distressing case both father and mother died within a few months, leaving eight children entirely unprovided for. Situations were found for the two elder, and the other children were placed in orphanages or with friends. In this case your Committee would wish to acknowledge the very material and valuable aid given by the Charity Organisation Society.

Since last Report sixteen *new* applications have been received.

In five instances help was refused, as the applicants were ineligible or appeared undeserving.

In one case advice and assistance (other than pecuniary aid) was given.

In one case the application was withdrawn, as help was forthcoming from relations.

Of the remaining *nine cases* the following is a summary :—

Case 1.—A dentist, aged 40, with wife and four children, being a sufferer with acute heart disease, was helped with a small grant during his illness. He died, and his widow has received temporary aid until she can find employment.

Case 2.—A dentist, aged 71, a L.D.S.Eng., and an old member of the Odontological Society, now in failing health, receives a small weekly allowance towards the support of himself and his wife.

Case 3.—A dentist, aged 62, has a weekly grant.

Case 4.—A dentist, aged 73, incapacitated by old age, receives a small weekly sum in addition to that provided by his son.

Case 5.—A dentist, aged 50, applied for help, having been rendered impecunious by a long illness. A grant was made, and admission gained for him to a hospital, where he died. His only child has been elected to an orphanage.

Case 6.—A widow, aged 36, with one young child, has had temporary help with rent and is now letting lodgings.

Case 7.—A widow, aged 57, has been helped to clear off debts and remove to a more suitable locality for taking boarders.

Case 8.—A widow, aged 56, whose husband died several years ago, and whose son has lately had a serious illness, has had a grant towards rent, and by the advice and with the assistance of your Committee, has succeeded in getting material help from a Masonic Fund.

Case 9.—The daughter of a dentist, aged 48, in weak health, who

for many years has been struggling to maintain herself by needlework, is for the present receiving a small weekly grant.

Seven children have by the influence of your Committee been helped (at no further cost to the Fund than a small expenditure on postage) to obtain admission to orphanages, and several adults have by advice and introductions been aided to procure remunerative work.

Your Committee, in order to forward the candidature of one child, and to secure the privilege of nomination and voting, have subscribed £5 5s. to the Wolverhampton Orphanage. The above powers can be exercised by the Committee for twenty years.

In several instances the investigations made or the help afforded has been useful in preventing begging, and warning letters have been from time to time inserted in the Journal, drawing attention to undeserving cases, and urging upon members of the profession the advisability of referring all cases to your executive. In one case an unofficial collection was stopped, and a grant of £5 secured the admission of the invalid into a home for life. By such actions your Committee desire to deserve and secure more support from the profession at large.

Many cases would have been more liberally dealt with had the funds at the disposal of your Committee been equal to the demand, and in view of the increasing number of applications it is to be hoped that even further effort will be made, so that this very necessary and useful work may be carried out in a way creditable to a liberal profession.

Your Committee would take this opportunity of thanking the Publishing Committee of the Journal of the Association for affording very valuable help by granting free advertisements from time to time on behalf of those dependent on the Fund, who were in want of employment. The thanks of the Committee are also due to those members who have so kindly helped the Hon. Secretary in the investigation of cases.

In accordance with Rule XX. this Report is now offered for your approval and acceptance, and in conclusion your Committee beg to acknowledge the kindness of Messrs. C. J. Ash, L. Matheson, and Storer Bennett in auditing the accounts which have been so carefully prepared, examined, and certified by our *chartered* accountant, Mr. J. W. Butcher, in accordance with Rule XXI., as modified at the last Annual Meeting.

The CHAIRMAN moved that the Report of the Committee be received and adopted. It was, he thought, a very satisfactory and lucid report, and showed that a very considerable amount of practical good had been done with, comparatively speaking, small means. There was no doubt that the money entrusted to the Committee was administered with the utmost

possible care and discrimination. It was satisfactory to find that the very small percentage of subscribers to members of the Association had been to some extent augmented, and the Committee and all interested in the Fund were very much obliged to those gentlemen who had so kindly assisted by personal effort in securing a considerable number of annual subscribers. Annual subscribers were, of course, the mainstay of such an institution, and though the Report did not state it, seeing that it was prepared by the Hon. Secretary himself, it was mainly through Mr. Ackery's exertions that the Fund was in its present satisfactory condition. It was not necessary to say anything further, seeing that the Report was in itself exhaustive, and they would agree that it was the duty of all interested in the Association to do their utmost to increase the number of subscribers to a Fund which was really doing so much good amongst the poorer and destitute members of the profession, their widows and orphans.

Mr BACON seconded.

Mr. R. H. WOODHOUSE explained that the fact that his uncle had not sent in the Treasurer's Report was no doubt due to delay owing to his absence in Switzerland.

The CHAIRMAN said they all knew Mr. Alfred Woodhouse's interest in the Fund was so deep that the absence of the Report was not due to any want in that direction. They were very greatly indebted to him for the beneficent working of the Fund.

The resolution was agreed to.

The CHAIRMAN moved the re-appointment of Mr. Alfred Woodhouse as Treasurer.. He was not only a gentleman of the highest professional standing and position, but he was thoroughly kind hearted, and at the same time a good man of business. Having those qualities he was peculiarly adapted for the position of Treasurer.

Mr. BETTS seconded the resolution, which was agreed to.

The CHAIRMAN said with regard to the Hon. Secretary, it was unnecessary to say a word in regard to the desirability of re-electing him. They well knew Mr. Ackery's great services to the Fund, and he had much pleasure in moving his re-election as Hon. Secretary.

Mr. R. H. WOODHOUSE seconded the motion, which was agreed to.

Mr. ROBBINS proposed that Mr. S. J. Hutchinson, who, when he vacated the office of President of the Representative Board, would cease to be a member of the Committee, be elected to fill the vacancy on the Committee caused by the retirement of Mr. E. Lloyd-Williams.

Mr. HERN seconded the motion, which was agreed to.

The SECRETARY said Mr. Matheson desired to resign the position of Auditor, which he had held for several years. Mr. Ash and Mr. Storer Bennett would, he thought, consent to again act in that capacity, but it would be necessary to elect a third auditor.

On the motion of Dr. WALKER, seconded by Mr. LAWRENCE READ, Mr. Ash and Mr. Storer Bennett were re-appointed.

Mr. LAWRENCE READ proposed Mr. Robbins as Auditor in the place of Mr. Matheson.

Mr. J. F. COLYER seconded the motion, which was agreed to.

Mr. WAITE moved a vote of thanks to the officers for their services during the past year. A formal vote of this kind was an extremely inadequate return for the amount of time, labour and thought expended in working the Fund. He knew something of its working, for only a week or two since he was visited by one of the recipients, who with unbounded gratitude expressed her obligation for the service rendered to her. He wished to add his testimony also to the services of the Hon. Sec., who by his energetic and able conduct of the Fund had laid the Association under perpetual obligation.

Mr. W. E. HARDING seconded the resolution, which was agreed to.

Mr. J. ACKERY, in responding, said any work done by the officers was a labour of love, and they had their reward in seeing that the Fund was duly appreciated, and knowing that they had been able to assist those who were unable to help themselves. For himself, he wished to thank the subscribers for his re-election as Hon. Sec. He took an immense amount of interest in the work, and should be very sorry to leave it, because he did not consider it was complete. He would call particular attention to one paragraph in the Report, in which the Committee referred to the effect of personal effort. He, with two or three others particularly amongst the London men, had materially helped matters forward by getting

additional annual subscribers, but they found it extremely difficult to get at the country men. Usually an opportunity occurred at the Annual Meeting for, at any rate, gaining a few adherents, but one could not do everything then. He hoped eventually to arrange some scheme by which local agents could be appointed in different centres who would look up those whom they knew personally; that was the only way, he believed, by which they would materially increase the number of subscribers. The present proportion of subscribers was not satisfactory. It was, perhaps, as good as occurred in many benevolent institutions of the same nature, but in a liberal profession like theirs they should have at least half the members annual subscribers. Until the Fund had reached that state he should not be satisfied that his work was complete, and he appealed to members residing in the different centres to get annual subscribers and so augment its usefulness.

Mr. HARDING wished to express his strong appreciation of the suggestion made by Mr. Ackery. In a Masonic body to which he belonged the same system was carried out of appointing local representatives. He hoped Mr. Ackery would succeed in formulating a similar scheme on behalf of the Fund.

Mr. CAMPBELL thought each member should endeavour, in his more or less limited sphere, to carry out the Secretary's suggestion, and personally canvas all his acquaintances who were not yet subscribers. He took personal blame to himself for not having hitherto done so, but would make it his business to see one or two friends who were not yet contributors. He hoped that others would do the same.

The CHAIRMAN said no doubt the suggestion was most valuable, and the Committee would certainly take it into serious consideration, with a view of appointing representatives in proper order in different centres.

Mr. CAMPBELL said the Medical Benevolent Fund appointed collectors in Dundee, and in every large town. Although a very much smaller body than the medical body, he thought such a step on their part would be very desirable, at any rate in Edinburgh, Glasgow, and such large centres.

The CHAIRMAN said the Committee would take the whole matter into their consideration.

Dr. WALKER thought they should have agents not only in the large towns but also in their suburbs. The Southern Branch would certainly heartily co-operate, and he believed he could send the name of a gentleman to the Secretary who would take a lively interest in acting as an agent for the Fund.

Mr. BOWMAN MACLEOD, in moving a hearty vote of thanks to Mr. Lee Rymer for his occupancy of the chair, said that so long as Mr. Rymer was at the head of affairs, they might rest assured that the Benevolent Fund would be well looked after.

Mr. LAWRENCE READ seconded the motion, which was carried by acclamation.

The CHAIRMAN said it afforded him perhaps more pleasure than anything else to be associated with the work of the Benevolent Fund of the British Dental Association. He hoped that their meeting in the beautiful city of Edinburgh would tend to very largely develop interest in the Fund.

Friday Afternoon.

On Friday afternoon the discussion on Dr. Fredk. Hewitt's paper on "Chloroform as a Safe Anæsthetic in Dental Surgery," was resumed by Dr. Wallace; Mr. J. Smith Turner, Mr. J. F. Colyer, Mr. G. Cunningham, Mr. Dent, Mr. Fisk, and Mr. Williamson also took part.

Papers were also read by Mr. C. Robbins on "Amalgams," Mr. W. Hern on "Oral Hygiene," Mr. Cunningham on "What the Dentist can do for the State," Mr. S. A. T. Coxon on "Springs." (Reports of the papers and discussions will appear in future numbers.)

THE ANNUAL DINNER.

The Annual Dinner of the Association was held on Friday evening, in the Grand Hall of the Waterloo Hotel, Mr. BOWMAN MACLEOD, President, in the chair. Mr. W. B. Paterson, Mr. G. M. P. Murray, and Mr. C. Rees Price acted as croupiers, and amongst the general company were Lord Provost M'Donald, Bailies Macpherson, Gulland, Sloan and Pollard, Judge Colston, Rev. Dr. Blair, Col. Wauchope, C.B., Professor Struthers, Dr. P. A. Young, Treasurer Roy. Coll. Phys. Edin., Brigade-Major Cranston, Mr. Thos. Hunter (Town Clerk), Dr. Jameson, Mr. W. Peterkin, Mr. T. Wallace, General Boswell, Surgeon-Col. W. C. Grose, Dr. Wallace, Surgeon-Major C. B. Bartlett and Dr. Hewitt.

Letters of apology for inability to attend were received, amongst others, from the Earl of Hopetoun, the Earl of Rosebery, Lord Balfour, Earl Wemyss, the Rev. Moderator of the General Assembly, Mr. Lewis McIver, M.P., Mr. Wm. McEwan, M.P., Mr. Robert Cox, M.P., Mr. Robert Wallace, M.P., Bailies Kinloch, Anderson and Steel and Reginald Macleod, C.B.

Grace having been said by the Rev. Dr. Blair, the loyal toasts were duly honoured; the toast of the "Navy, Army and Reserve Forces" was proposed by Mr. MURRAY, and responded to by the LORD PROVOST as Lord High Admiral of the Forth, Colonel WAUCHOPE, C.B., as Military Commanding Officer of the City of Edinburgh, and Brigade-Major CRANSTON.

Mr. GEO. CUNNINGHAM, in a characteristically humorous speech, proposed the toast of "The Lord Provost and Magistrates of the City." He said that, joking apart, there was a kind of peculiar fitness in his proposing this toast, because he was, as it were, a child of the Corporation. He would say, and say feelingly, that as an old Heriot boy, educated at the expense of the Governors of Heriot's Hospital—which was one of the principal schools with which the Municipality of Edinburgh was identified—it was indeed a proud privilege to be allowed to propose the toast of the Provost and Magistrates of that city. The Municipality was an educational body, and so was the British Dental Association, and in the magnificent reception which the Provost in his official capacity had accorded them, he had done something to educate the people of that city rightly to appreciate the dental profession.

The LORD PROVOST, in responding, spoke of the high esteem in which Mr. Bowman MacLeod was held in the city of Edinburgh, and expressed his gratification that he had been selected as President. Edinburgh did not entertain everyone for the asking, but the Municipality considered that the visit of the Dental Association was a compliment to Edinburgh, and therefore had done their best to afford a hearty welcome. With regard to the dental profession, as one who had groaned under it, perhaps the less said the better, but at the same time there was no denying the fact that by not only improving personal appearance, but also tending to prolong life, it was doing a very great work indeed. Speaking of Edinburgh, he claimed that its first business was education. Its system of education was perhaps the finest in any great city in the world. It had one of the grandest universities that could be produced: it had a most efficient set of secondary schools; and also the Heriot Hospital—of which Mr. Cunningham was a splendid sample—having a revenue of £35,000 a year, all of which went in education. Besides all these, the Merchant Companies' Schools were educating over 6,000 boys, and were sending them into the University by the hundred. On behalf of the Corporation he

welcomed the Association as they were always ready to welcome any gentlemen or body of gentlemen interested in art, technical or professional work.

Dr. P. A. YOUNG, in proposing "The British Dental Association," said: I have been filled, while we have been discussing the first part of the programme, with considerable trepidation, lest the advocacy of this toast from my lips should be wanting in commending it to your consideration; but I have felt encouraged, comforted, and supported by the reflection that it does not require any of my feeble words, seeing that the recollection of the good deeds of the British Dental Association in the past, and the earnest of good deeds in the future, are sufficient to commend the toast to you. We are assembled in a medical city, and I am sure, personally, I regret that the season of the year when so many medical men take their holidays, has prevented our Medical Corporation and Association showing you official honours. It is a source of great regret to me, personally, that this has not been the case. The Association, as you know, has been founded for the promotion of the dental and allied sciences, and the maintenance of the honours and the interests of the dental profession. When we consider the immense progress of general surgery, when we consider what surgery was in the time of the barber surgeons, and what it is now, as represented in the person of Sir Joseph Lister or Sir James Paget, we are astonished at the immense progress that the art of surgery has made. And not the less is this the case when we consider what the dental profession was—how, from the public point of view, it was represented by the itinerant practitioner, who wandered through village fairs and extracted the teeth of the rustics under the anæsthetic influences of the braying of a brass band or the banging of a big drum, and then what it is to-day, as represented by the late Sir John Tomes, whose death we all deplore. When we consider all this we can easily grasp the immense advance that the dental profession has made. I have been very much struck, in looking over the list of your members, to see how many arts graduates there are of the universities of Oxford, Cambridge, and Dublin, and how many of your profession have taken university degrees. This must speak volumes for the general culture of your profession. And while you are paying attention to the upper ranks of the profession—it is, of course, the weakest link that marks the strength of the chain—you are attempting, by all the means in your power, to advance the general level, and I have the assurance of those in authority that you are endeavouring, as far as you can, to carry out the Dental Act, so that the general level of the profession may be elevated. This you do by moral suasion where moral suasion will be sufficient, but if not, you use the stronger means in your power. I sincerely trust that by these efforts on your part your learned profession will go on increasing, and will take that position which it so well deserves. I have very much pleasure in asking you to receive the

toast of the British Dental Association, and in coupling with it the name of the gentleman who has, I understand, done so much to bring about all the changes to which I have referred—Mr. Smith Turner, who, along with Sir John Tomes, was a pioneer in bringing about the Dental Act.

The toast was heartily responded to.

MR. J. SMITH TURNER: Mr. Chairman, my Lord Provost and Gentlemen,—Our profession is a serious one, and I do not think there are many jokes associated with it, and therefore you must pardon me if I am rather prosy. I ask your indulgence to-night on peculiar grounds also. It seems that "Herioties," as they are called, have great favour in your eyes, and in the eyes of your Lord Provost. I must tell you something that may interest you. My father was a Heritor, therefore, I ask you to extend the kind consideration you have shown to Heritors to the humble son of a Heritor. It is rather awkward for me perhaps to have to speak to you to-night. We dentists, though perhaps I should not say so, after the eloquence displayed by my friend, Mr. Cunningham—but the real fact is we dentists are so much accustomed to get people to open their mouths to us that we feel it rather awkward to open our mouths to other people. Still the subject of the British Dental Association is always an interesting one to dentists, if not to the public generally, just as this great city of Edinburgh is a subject of interest, not only to its citizens but to its visitors. I have heard and seen a good deal of this city in the last two days, and I have been reminded rather of a story about a Chicagoan. There was a citizen of Chicago who had a very high opinion of himself—that is not unusual, perhaps some of the citizens of Edinburgh have. I am an Edinburgh man myself, and I may be presumed to have that high opinion. He also had a high opinion of the city of Chicago. Well, that gentleman died, and when he arrived at the door of his eternal home, and the door was opened for his admission, he looked round and said: "Well, I think this is very creditable to the City of Chicago. I thought when I arrived in heaven I should see an improvement on the City of Chicago, but I do not see any improvement here." "Sir," said the attendant, "this is not heaven." I do not suppose anybody has found Edinburgh anything but a charming place. It is the only place in the country where you can get fresh air, and this brings me to the necessity of saying something about the toast that has been so ably proposed. The British Dental Association seems to be pretty vigorous, if I judge from the assembly I see around me to-night. This is, I think, its Fifteenth Annual Meeting. It must have cut its twelve-year-old molars, but it has not yet cut its wisdom teeth, and by the time it does so I hope it may be something very grand indeed. Our Association, like the City of Edinburgh, aims at progress through education. We are now trying to enlarge our curriculum, to expand it gradually. I would ask those members of the medical profession

who are here to look back a few years and consider what the medical profession was when the first Medical Act was passed, about forty-six years ago. Our Dentists Act is only of sixteen years' duration, and I think we may take credit to ourselves for having made considerable progress. But we must also give credit where it is due, and say that the medical profession have, in many respects, been our right hand. They have extended to us not only guide and support, but generous sympathy, and we thank them for it. Then we have a great work that we are performing. Mr. Fisher, of Dundee, an active member of our Association, some years ago instituted an inquiry into the condition of the teeth of children in Charity Schools. That business has been taken up by the Association, and has been carried on with great assiduity and energy by my friend, Mr. Cunningham, who with others has been instrumental in having dental surgeons appointed to manage certain schools, and to look after the teeth of the children. That is a step which will work a great change in our national health if it is carried out in its integrity. We have also tried to induce the authorities—though we have not been very well received in the matter, meeting with words of promise which have been grand to the ear, but have, I am afraid, been rather broken in the realisation—to establish a supervision of the teeth of recruits for the Army and Navy. The Navy has made some few steps forward in that direction, but it is not satisfactory. We hope to go on in this work. I need not enter into statistics now, but if you could only realise the number of recruits that are rejected because of defective teeth you would at once know the value of the work we are doing; and if you could further realise the number of men who are on the sick list both in the Army and Navy from this cause you would, as taxpayers, see the value of our work. With regard to what Dr. Young said about the strong arm of the law being used to prevent people practising on a too credulous public, I must say there was an article in one of your evening papers—I think the *Dispatch*—blaming the administration of the British Dental Association because it had not taken more active measures against the infringers of the Dentists Act. I can only say this, that we are gathering together slowly but surely all the power that the Dentists Act gives us, but that power has to be tested. Just as you test every link in a chain, so we must test every clause of the Act before it can be put into full force. But I would like to say a word further, that is, that hitherto the efforts that have been made have not been supported by the public; I say it unhesitatingly—the public is decidedly on the side of quacks, and the sympathy of the public goes with the quack who is prosecuted, and not with the prosecutor. I would say this further as a fact known to many here, that our President, who instituted a prosecution against a notorious quack in this city, had his effigy burnt before his own door by a large crowd because he had ventured to discharge the duty he thought

incumbent upon him as a member of the Association. I told you that our efforts are educational. We are extending our curriculum, making our examinations more stringent, and gradually we hope to bring our profession up to the level it ought to occupy with the other learned professions, and the medical profession in particular. I have also told you we are endeavouring to enforce the provisions of the Dentists Act, not for our own protection, as educated men can do very well without that, but for the protection of the British public. In the name of the Association I thank you for the kind way in which you have received the toast, and the patience with which you have listened to its acknowledgment.

Mr. BREWARD NEALE, in proposing "The Medical Council and University of Edinburgh" said the University, although the youngest of the Scotch Universities, rejoiced in having the largest number of students, and further, in having a library of not less than 200,000 volumes. It had a world-wide reputation, and was everywhere known as a great and successful teaching institution. He wished it every success, and hoped that it might, before long, found a chair in odontology. With regard to the General Medical Council, he called attention to the change made in its constitution by the election of five medical representatives, elected by the profession. There was, however, one point in which no alteration had been made, viz., that there was no representative of the dental profession. It was a maxim that those who found the sinews of war should have some say in the management of the ship. At the last annual meeting of the British Medical Association, strong claims were put in for increased direct representation. Whether the suggestion made for a short Act of Parliament to be passed for this special purpose would be successful or not, he did not know, but he sincerely hoped it would, and that the dental portion of the community might receive at least one representative.

Emeritus Professor STRUTHERS, in responding, expressed the opinion, as an old member of the General Medical Council, that it was too numerous already, and that instead of being thirty, it should be cut down to fifteen. He expressed his disapproval of direct representation, which led to so much speaking to the gallery, and said the best men on the Council were the Crown nominees.

The toast of "The Guests" was given by Mr. REES PRICE, and responded to by General BOSWELL.

On the proposition of Mr. DAVID HEPBURN, the health of the President was drunk with three cheers, and an additional cheer for Mrs. MacLeod.

The PRESIDENT expressed his thanks, and said he should look upon that day as the best he had ever lived. He thanked them even more sincerely for not having neglected Mrs. MacLeod, who, with the assistance of the Ladies' Committee, had done very much to add to

the enjoyment of the meeting, especially as far as the comfort of the wives and daughters of members were concerned.

During the evening the band of the Forth Division, Royal Engineers, discoursed an excellent musical programme, while the "Harmonist" Quartette contributed vocal selections. A piper, it may be mentioned, introduced "The Haggis," a Scottish national dish, during the service of the dinner, with pipe-music appropriate to the occasion.

LADIES' RECEPTION AND CONVERSAZIONE.

A Reception, which was largely attended by the lady visitors to the Edinburgh meeting and others, was held during the evening in the Victoria Hall of the Waterloo Hotel by Mrs. Bowman MacLeod, who was supported by her daughter Miss MacLeod.

A selection of music was performed by an orchestra under the direction of Mr. Moonie, glees and part songs were delightfully rendered by the "Edinburgh Harmonists," and an exhibition of Highland dancing was given by Master Jas. Lindsay to the stirring strains of the bagpipes.

With permission from the hostess, an addition to the programme was provided by a party of volunteers from the Annual Dinner, which was then in progress, consisting of Messrs. David Hepburn, Alfred Smith and Hopewell Smith, who under the leadership of Mr. W. B. Paterson, by recitations and songs contributed in no small degree to the amusements of the evening.

Saturday, August 31.

Saturday was given up to an excursion to Loch Lomond and a luncheon at Tarbet, at the invitation of the Scottish Branch. The party, numbering about 350 ladies and gentlemen, left Waverley Station by special train at 9.15 for Balloch, at the foot of Loch Lomond. On arrival, a special steamer was waiting, in which they sailed up the Loch as far as Inversnaid, returning to Tarbet. Here in a spacious marquee in the grounds of the Tarbet Hotel luncheon was served. At the conclusion, on the motion of Mr. LEE RYMER, J.P., a hearty and enthusiastic vote of thanks was passed to the Scottish Branch for their courteous hospitality.

The PRESIDENT, in acknowledging the vote, said the work of entertaining the Association had been a great pleasure to the Scottish Branch, and they were fully repaid in knowing that their visitors were gratified and satisfied. They would not again see the Association for some years to come in Scotland, but he hoped as soon as it was possible for them to come back again they would do so.

Concluding Meeting.

The concluding meeting, owing to the unfavourable weather, could not be held on the lawn, as was at first intended; it was therefore held in the hotel, Mr. Bowman MacLeod in the chair.

The PRESIDENT moved a vote of thanks to the Principal and members of the Senate of the University, who had so courteously afforded accommodation for their meeting.

This was carried by acclamation.

The PRESIDENT then moved a vote of thanks to the Lord Provost and Magistrates of Edinburgh. The Association, he said, had received unstinted welcome and successful entertainment at their hands. Besides the official reception in the City Chambers, at which every guest was made to feel thoroughly at home, the Corporation had assisted the Association by providing the necessary installation for the electric current for the Exhibition, and also the floral decorations and foliage plants in the Reception Room and the Victoria Hall. On these grounds the Corporation were deserving of most hearty thanks.

The resolution was unanimously adopted.

Votes of thanks were also accorded to the readers of papers and demonstrations, and to the Ladies' Committee, who had so well looked after the comfort and contributed to the enjoyment of the lady visitors.

On the motion of the HON. SECRETARY, Mr. Paterson, a vote of thanks was passed to the Local Honorary Secretaries and the Local Committee.

This concluded the business, and after short excursions to Arrochar and the neighbourhood, the majority of the party returned to Edinburgh, well pleased with the day's excursion, in spite of occasional showers.

Central Counties Branch.

THE eleventh Annual Meeting of the Central Counties Branch was held at the Birmingham Dental Hospital on Saturday, July 20, under the presidency of Mr. F. W. RICHARDS. Amongst those present were Dr. Joseph Walker, Messrs. W. R. Coleridge-Roberts, Roff King, W. E. Harding, Breward Neale, John Humphreys, H. N. Grove, F. R. Howard, E. A. Vickery, J. Mountford, J. E. Parrott, A. T. Hilder, J. W. Turner, F. H. Goffe, H. R. F. Brooks, A. A. Sarson, H. Owen, A. E. Donagan and others.

Both the Treasurer's and Secretary's reports—which were of a satisfactory character, showing an increase both of balance in hand and of membership—were read and adopted.

Mr. John Humphreys was elected President for the coming session ; the other officers elected were as follows :—President-elect, Mr. F. E. Huxley ; Vice-Presidents, Messrs. Roff King and F. W. Richards ; for the Council, Messrs. F. R. Howard, W. R. Coleridge-Roberts, and A. T. Hilder ; Auditors, Messrs. P. Nadin and M. Knott. The Hon. Treas. (Mr. J. Mountford) and Hon. Sec. (Mr. A. E. Donagan) were also re-elected.

Mr. F. W. RICHARDS delivered the following Valedictory Address :—

GENTLEMEN,—My humble duty is now to address a few parting words of farewell to you upon my retiring from the position of your President, to which you in your kindness elevated me twelve months ago. My heartfelt thanks are due to you for the support which you have extended to me during my year of office, for the attendance you have given at the various meetings that have been held, and for the interest you have taken in the proceedings and communications. My thanks are especially due to those who have come forward and read papers before us, the preparation of which have taken up many hours of their leisure time, and to those who have communicated to us subjects of a casual character—subjects that are always of considerable interest, and often lead to discussions of great animation and advantage.

My duties of the year have been a source of great pleasure to me, and it has been my endeavour to make them useful and acceptable to all the members. The welfare and prosperity of the Branch is a matter in which I take the greatest interest, and I am most anxious that all of our young *confrères*, as they pass through the portals of the profession by obtaining their diplomas in dental surgery, should enrol their names on the books of the Branch and help to swell our numbers.

It is with regret that I notice among a certain section of the members of the British Dental Association what seems to me to be an entirely erroneous idea of what should be the objects and aims of the Association. The Association was formed not merely for the purpose of carrying out the provisions of the Dental Act. This, no doubt, is a very prominent reason for the existence of a Dental Association, and if we can succeed in checking even to a small extent the intrusion of unregistered or totally unqualified practitioners into the profession, we shall have performed a great achievement. But the Association aims at something far nobler and higher than that merely selfish end. We desire to further by every means in our power the advancement of dental science in all its branches, by bringing the members of the profession together to discuss professional matters, by reading papers on various dental subjects, by the discussion of novel methods of treatment and new discoveries which assist in the prevention of human suffering, by encouraging among the members, and particularly the younger members of the profession, a desire to practise their art not for the sake of pounds, shillings and pence, but in order to alleviate as much as possible that pain which no philosopher has yet learned to bear with patience. Even the oldest practitioner has something to learn, and it is by discussion and intercourse with other members of the profession that such knowledge as we possess is extended and improved. This is the high aim which we set before ourselves, but the Association has also other more practical aims. We endeavour to further the education of students by suggesting to them, through the

medium of papers and discussions, fields of research, and food for thought which shall increase their knowledge. We endeavour, too, to bring about the unification of the examinations which are necessary to qualify a student to practise as a dentist. At present the various diplomas obtainable are given on the results of examinations of varying severity, and our desire is to make one definite standard which every student must reach, so that all diplomas shall be of equal professional value. Another of our objects is to educate the public of this country to place the dental profession in the high position to which it is entitled. These are only a few of the objects for which the Association was founded, and if we can succeed in carrying out even these few ideas we shall have done a great work, and fully justified the existence of the Association. But I must not detain you longer, our time is limited, and there is other business before the meeting. In conclusion, let me once more express my appreciation of the high honour which you have paid me by electing me to hold for a year the position of President of this important branch, and to thank you all for the courtesy you have shown me, and the kind assistance you have given me in performing the pleasant duties of the office. Let me also express the hope that the Branch has a bright and useful future before it, and that its work in the future may be even more successful than it has been in the past.

Mr. J. HUMPHREYS then delivered his Presidential Address.*

An adjournment was then made to the Conservancy Room, where Demonstrations were given by Mr. J. Mountford on Non-Cohesive Fillings in Incisors; Mr. H. R. F. Brooks on Gold Filling with Electric Mallet; Mr. J. E. Parott also showed various methods of Mounting Logan Crowns; Mr. A. E. Vickery packed some vulcanite dentures, lining the rubber with vulcanisable gold, and explained the different ways in which it could be used, he also cut cavities in porcelain teeth with diamond drills, filling the cavities with gold, to be used in dentures, giving the appearance of natural teeth with fillings; whilst Mr. J. D. Whittles presided over a most excellent and interesting collection of microtomes and instruments for microscopical work, giving demonstrations on the use of each, and also showing a varied selection of slides under microscopes.

The members were entertained at luncheon at the Grand Hotel by the President, and afterwards conveyed to the Edgbaston Botanical Gardens, where the President and Mrs. Humphreys held a Garden Party. A few hours having been pleasantly spent in this manner, a return was made to the Hotel, where the Annual Dinner was held. During the courses and between the speeches, the St. Chad's Cathedral Quartett discoursed sweet harmony. The principal toasts were "The Queen," "The British Dental Association and Central Counties Branch," proposed by Mr. Gilbert Barling and replied to by Dr. Joseph Walker and Mr. W. E. Harding; "Kindred Medical Societies," proposed by Mr. W. R. Coleridge-Roberts, for which Mr. T. F. Chevasse and Dr. A. H. Carter, Presidents of two local Medical Societies, responded.

Dr. SUCKLING wished prosperity to the Birmingham Dental School, and Mr. F. W. RICHARDS, in replying, quoted figures and facts to show that the School still acted up to its motto "Forward." "The Visitors" responded through Dr. UNDERHILL.

* To be published in a future issue.

ORIGINAL COMMUNICATIONS.

Inaugural Address.*

By W. B. MACLEOD, L.D.S.Edin.

GENTLEMEN,—I thank you most sincerely for the confidence you have shown in me in electing me to this high and honourable position, and in return I promise that I will discharge the responsible duties pertaining to the office, and maintain the honour and dignity of the Association, to the best of my ability. In the name of the Scottish Branch I give you a most hearty and cordial welcome to this most ancient and romantic city. I offer you a *double* welcome because this is the second time of your coming, and we therefore esteem your return as a *high compliment*, and an acknowledgment that your previous visit was not only profitable but pleasant.

We would that this annual gathering had been all brightness, all sunshine undimmed by the faintest shadow of a cloud. But this was not to be. He whom we all looked up to as our professional father, our guide, philosopher and most loyal friend, but a short month ago passed over to the great majority, and the time is yet too recent to discharge us of our sorrow, or blunt the keen edge of our most sincere grief. Fourteen years ago he presided over the first meeting of the British Dental Association, and for fourteen years he continued to take a most active interest in its affairs. Though latterly, by reason of the infirmities which accompany old age, we have not had the pleasure of his bodily presence, we have had his yearly message, and the ever welcome advice and assistance of a well-balanced and far seeing mind, and the brotherly encouragement of a genial and reasonably sanguine spirit.

At Caterham, on July 29, Sir John Tomes, full of years and full of honours, bade good-bye to this world, leaving behind him a long life well spent in the service of humanity and his profession.

Though dead, his works survive him, and will remain green

* Read at the Annual General Meeting of the Association held in Edinburgh, August 29, 1895.

and active when you and I and generations of our successors are known no more.

That we have this noble pile of buildings placed at our disposal for our deliberations is but another illustration of the fact, that what we look upon as evil, frequently turns out, not only for good but generally for better, as in the present instance. When we found that, owing to structural and other alterations, we were deprived of the use of the Royal College of Surgeons' halls, in which we had such a pleasant and successful session on the previous occasion of the British Dental Association Meeting in Edinburgh, we were greatly disappointed, but plucking up heart we ventured to approach the University authorities for the use of the College class-rooms. We were made most welcome to the accommodation we asked, and more if it should be required.

We meet, gentlemen, in the youngest but not the least famous of Scotland's Universities, a University not only famous for its academical vigour, but for the historical and romantic associations which attach themselves to the site upon which it is built and to the men who founded it and nursed it through the perilous times of its growth towards maturity.

About the south-west corner of the present quadrangle, close to the Flodden Wall, which early in the sixteenth century was cast round the city for its greater security and defence, after the Flowers of the Forest were "a' wede awa," stood the Kirk o' the Field, a building which had a gruesome immortality conferred upon it when it was destroyed by murderous conspirators, and when with it perished handsome Henry Darnley, consort of the beautiful, but ill-starred Mary, Queen of Scotland.

These indeed were perilous times, full of strife and fury; but amid all the turmoil, the clang of arms and the shedding of blood, a better and more reasonable spirit was growing among the people, which before the century closed took practical form in the opening, by the Town Council of Edinburgh, of this the Town's College, in the year of grace, 1583.

Mary had made some small contribution by grants to its foundation, and her son, a curious mixture of pedantry and wisdom, whose better and higher aspirations were "sair

hauden doon" by a gross materiality, encouraged its foundation and took it under his special patronage, as witness the inscription over its portal "Academia Jacobi Secti Scotorum Regis." This patronage of James VI. of Scotland and I. of England is more interesting to us than one would at first suppose, because among his many laudable foibles was a hankering after chirurgery and especially after dental surgery, as is evidenced by the following excerpt from the books of the Royal Treasurer of that period:—

"Item, To ane fallow because the king pullit furth his
"twtht XVIII shillings."

"Item, To Kinnard the barber for twa teith drawin furth
"of his hed by the King XVIII shillings."

This faint foreshadowing of interest in our own speciality was transmuted into more solid form after the three Munros raised the fame of Edinburgh as an anatomical school and brought the University to the forefront of medical teaching bodies.

Still more strongly is our interest evoked when we find these great anatomists succeeded by one equally great—Professor Goodsir, who served his pupilage with the father of Scottish dentists, Mr. Nasmyth, before settling down to his life's work in Human and Comparative Anatomy. Much of that skill and delicate precision with which he handled the scalpel he, in no small measure, attributed to the training in the handling of tools in Nasmyth's workshop, which required suppleness of fingers, quickness of eye, correctness of judgment, and precision of execution. Four years of pupilage he served in the laboratory and the surgery, and he seems to have made good use of his time, for in August of 1834 he was left in charge of Nasmyth's practice and gave wonderful satisfaction, as we find from letters written by Nasmyth to John Goodsir the father, then practising as a surgeon in Anstruther, Fife. One notable instance of Goodsir's dental expertness is related by Nasmyth when he attended Dan O'Connel, the liberator, and relieved him of a wisdom tooth, Dan remarking, "That was a satisfactory repeal of the Union."

Though quitting the practice of dentistry we see that it had an influence on the direction of Goodsir's studies in original research, for in 1839 he published a treatise on the

"Origin and Development of the Pulps and Sacs of the Human Teeth," a work which in its day and generation was acknowledged to be a marvel of original research, and although the theory of development as therein stated is not now held, it gave an impetus to the study of tooth genesis and histology, the influence of which is felt to this day. In the same year he published a further article on "The Follicular Stage of Development of the Ruminants, with some remarks on that process in other orders of Mammalia," and further in 1844 he read before the Medical Society a paper on "The Mode in which Musket Bullets and other foreign bodies are enclosed in the Tusks of the Elephant."

In 1846 he was elected to the Chair of Anatomy and still continued to work in the byeways of human and comparative dental anatomy, filling his sketch book with drawings, his note book with observations and his shelves with specimens, all showing him to be a most indefatigable worker, a close observer, a careful reflector and a most punctual recorder. His manuscripts and diaries, a specimen of which some of us had the pleasure of seeing the other day through the kindness of their present custodian, Professor Chiene, are truly Pepsian in their characteristics.

Yet another close interest have we with the history of this university, in the discovery of the anæsthetic effect of chloroform by one of the greatest of its professors, Sir James Y. Simpson, a discovery which not to our profession alone, came as a most beneficent handmaid, stripping the major operations in dental surgery of the barbarous torture which attended them, and prolonging many a life in peace and comfort which otherwise would have been cut short by the dread fear of the dental forceps. We owe our thanks to Syme for his consistent exposition of the merits, the simplicity of its administration and safety of this anæsthetic in surgical operations; and to Lister also, for his introduction of anti-septic treatment.

If general surgery has made rapid progress during the last half century, no less can be said of our own speciality, and I need only refer to the published transactions of these our annual meetings as well as to the general literature of our profession, to confirm the assertion. By a systematic course of education, progress has been made and the standard of

efficiency has been raised, as more and more attention has been directed to the preservation of the teeth. One of the principal factors towards this betterment, this extension and exaltation of our usefulness, has been the establishment of dental hospitals in which the youth of our profession are being clinically instructed in the possibilities of conservative dentistry, and in which the general public are being taught that by a little timely attention many an errant tooth can be restored to health and usefulness.

While I do not think that it is necessary in the meantime to extend the present years of professional study in order to gain a licence to practice; nor that it is necessary to alter in any material degree the number or nature of subjects as at present laid down in the curriculum, I feel at the same time that one of the subjects of hospital practice might with advantage be dealt with in a more systematic fashion, getting more out of the time at disposal and putting more into the student by cultivation of subdivision in the duties of preceptors, and methodical progress from the lesser to the greater under the guidance of a responsible, experienced and permanent control. Now our hospitals are good, wonderfully good, considering the short period of their existence, and the woefully meagre support they receive from the wealthy and benevolent public; but I am under the conviction that they can never reach their possibilities of efficiency until they can support a Chair in Clinical Dental Surgery.

Other divisions of study have claims for consideration, and Chairs for these will come in time, but this one has to my mind the most urgent claims, and should be the primary object of our efforts in shaping the immediate future of our educational institutes.

"For what reason would you have a Chair in Clinical Dental Surgery?" I hear some of you asking. "Is not the present method of teaching good and efficient?" I admit that it is good, I even admit that it is efficient so far as it goes, but I cannot help seeing that it is not perfect, and that a great deal of energy is dissipated for want of a paid and permanent teacher of *matured experience*, who would devote a large portion, if not the whole, of every day, to supervision, direction and demonstration. The present tutorial or house dental surgeon certainly works on this line, but he is an ever-

changing factor, with limited experience and restricted authority, capable of supervising and instructing the juniors, but not sufficiently far ahead of the seniors to be looked up to as an authority, and not sufficiently stable in office or mature in experience and judgment to give a broad, round, healthy, vigorous and abiding scientific tone to the teaching of the school.

Further, I hear some of you say, "How is this to be attained? Have we not sufficient difficulty in obtaining the sum required to carry on the present system, without adding to our burden by creating an additional cause of expenditure, even if it will add to efficiency, and if we should be bold enough to do so, from whence are we to obtain the sinews of war?"

As God helps those who help themselves, we would require before asking help from others to give proof that we had done something to deserve assistance. This without boasting I think we can do. London has three large dental hospitals, Liverpool, Manchester, Plymouth, Newcastle, Dublin, Glasgow and Edinburgh possess similar institutions, which have been opened and mainly sustained by the liberality of members of our profession, in personal service and by monetary contributions, but as yet not one of these is free from the incubus of debt, or possesses an endowed chair, nor ever will unless we call attention to the work we have done, the work we are still doing, and above all the work we have still to do but cannot accomplish until we are placed in possession of the means to do so.

How is this to be attained? The Imperial Government might be approached, but I am afraid that little reliance need be placed on aid from that quarter, so that I will leave this source of probable assistance to the consideration of those who believe it to be the duty of the State to give all things to all men, and yet I do not despair of the coming day when in one form or other Her Majesty's Government, who have already recognised our claim to professional status, will see it to be their duty to extend to our hospitals and schools substantial pecuniary support.

If not to the Imperial Government to what source are we to look for substantial aid and encouragement? First of all to ourselves, second to our local corporations, and thirdly to

that great and ever increasing class, the wealthy individual, who, having more of this world's goods than he can use for his own necessities, is looking for a channel into which he can direct surplus wealth, where it will be utilised for the amelioration of distress, the advancement of education and the special welfare of his less fortunate fellows.

Of what we have done for ourselves I have already spoken, but there may be still one or two here and there who have not yet contributed their quota to the general fund, some because of indifference, some because when, at the time of asking, they had little of this world's goods to spare. Let these now wake up and pour in a little of the metallic *pabulum* into the hungry and emaciated treasury. So may we then go forward with a good conscience in a good cause and approach the remaining two.

As for help from our Local Corporation (City and Guild), you may rest assured of assistance according to their means and your deserts. I think that most of our hospitals and schools have already received recognition from one or other of their local corporations, and I know of no body of men more anxious to promote the welfare of educational and benevolent institutions than Civic Corporations. Take as an instance the Town Council of this city, and look around you for one result of their wisdom and benevolence. But for them, I question if the Town's College, the University of James VI., would ever have come into existence. Certainly it would not have long survived its birth or risen to the present exalted position but for their helping hand and continuous encouragement. And if I might venture to mention it, our own hospital and school has been greatly tided over its initiatory difficulties by the timely help it has received from the residue grant at the disposal of the city, and which I pray may be continued until we have flourished and waxed strong.

There is yet another source to which we may look and from which we may expect much: I refer to that large and ever increasing class, the wealthy and benevolent (or their trustees), who, if they have the facts proving the large area covered by our ministrations, the immense benefits conferred upon suffering humanity by our service in promoting and preserving special and general health and the utter impossibility of our carrying on this good work unaided, will, with that enlightened

generosity which has characterised their dealings with similar institutions, extend their aid to us.

That we have had so little encouragement in the past from this source is not much to be wondered at. We are young, other and older institutions have claimed their attention while we have lain in the shadow of their importance and importunity.

Here then, gentlemen, is something to interest yourselves in, a fresh development to stimulate you to renewed and increased energy, a fresh and additional plea to place before those who have helped you in the past, and a stronger and broader claim to urge upon those from whom you would seek assistance in the future. Up with you, then, and be doing, and take with you in the good work your wives, your sisters, your daughters and your friends ; get them to co-operate with you in making our aspiration and our necessities known in the press, in the chamber of the lawyer, in the Council room of the Corporation, in the offices of the employer of labour, in the mansions of the wealthy, and in the parlours of the well-to-do, and so doing, I have no doubt that before the time comes round when this city is again honoured with a visit from the Association, it will be the proud boast of our teaching hospitals and schools that the millstone of debt hangs no longer round their necks, and that now free from the distracting and depressing effects incident to struggling for a bare existence, they are free to devote their full strength and energies to furnishing the greatest good to the greatest number, the profession and the people, and when we reach this stage of development much will still be left for our successors to do, for the progress of a profession is but analogous to the progress of the traveller, ever he moves onward to the horizon, and, as he moves onward, the horizon keeps pace with his progress. He looks at the store which he has gathered by the way, finds it good but all too little and imperfect, and then presses on towards that goal where, when reached, will be found the ideal of all good men—perfection.

ERRATA.—We regret that amongst the Exhibitors of Dental Appliances, at p. 443 of our last issue, we gave the address of Messrs. Bellis & Co. at Edinburgh ; it should have been Liverpool.

Valedictory Address.

By C. S. TOMES, F.R.S., M.A., M.R.C.S., L.D.S.Eng.

GENTLEMEN,—Though I am not at all devoted to addresses, there has grown up a custom that the retiring President should take leave of office and introduce his successor in that form. While I do not like to wholly break with this usage, yet on this occasion, when a great bereavement has prevented my being present with you, I am little in the mind to sit down and write out more than a very few words.

To us as a profession my year of office has not been eventful, nevertheless, in many directions we have a little real progress to report.

In the administration of the Dentists Act, which is one of the primary objects of this Association, we have scored several successes; that is to say, we have succeeded in prosecutions which have broken somewhat fresh ground, and so have crippled fresh forms of evasion which had hitherto been untouched.

In the matter of strengthening the Dentists Act also we have a little, just a very little, to report. It may be within the knowledge of some of you that one form of attempt to evade the Dentists Act and similar Acts is for the intending offender to constitute himself into a bogus or "one man" company, this device having been apparently hit upon in the first instance by persons who had infringed the Pharmacy Act and had been successfully prosecuted under it and fined. A Departmental Committee, very strongly constituted, was appointed by the Board of Trade, to enquire into and suggest amendments to the existing Companies Act, and has just issued its report. This Committee was approached upon behalf of the British Medical Association, the Medical Defence Union, the Pharmaceutical Society and the British Dental Association, and though we did not get what we hoped, yet we got something. For although the Committee considered that our applications related to matters which lay outside the specific things referred to them by the Board of Trade, yet they appear to have been so far influenced by the facts laid before them as to introduce into their draft Bill a clause which, if it becomes law, as it probably will, will enable complainers to have any company formed for a

fraudulent or illegal purpose compulsorily wound up ; and the court may in such a case declare the liability of any or all of the members to be unlimited. It is not much to congratulate ourselves upon, but it is better than nothing, considering that the Committee had some of the very highest legal talent amongst its members and that our complaint has been favourably viewed by them. Indeed, we hope that we may get something yet stronger, seeing that our applications were not in any way rejected or controverted, but merely considered not to lie exactly within the already too large scope of the Committee's enquiries.

To turn to the calmer waters of science, there is again nothing very striking to recount, but here again, there is something to record. Our literature has been enriched by Mr. Hopewell Smith's very excellent handbook of Practical Dental Histology, which should be upon the shelves of every worker in this department of science. I can assure them, from my own experience, that they will find it of the greatest service. And in the pages of the *Dental Cosmos* will be found a remarkable series of papers by Dr. Black, of Jacksonville. I do not think that he has quite escaped all of the many pitfalls which beset the path of the scientific investigator, and I opine, therefore, that some of his results and of his methods are open to criticism.

But he has performed a vast number of experiments, many of which have led to results which are highly suggestive, and has put forward theories which afford food for a good deal of thought and further experiment. Among the more important I may mention that he has experimentally determined the force exerted in ordinary mastication, and has shown that that exercised by an artificial denture falls far short of that exerted by a patient's own teeth.

And whilst determining the maximum pressure which can be exerted, which, as might be expected, varies greatly in different individuals, he has been able to ascertain what force fillings have to withstand.

These constitute positive additions to our knowledge, as do also some of his amalgam experiments. I have a good deal to say in the way of criticism of these amalgam experiments, which will be better said elsewhere, and I cannot help the feeling that a closer study of the work previously done in the

same field than seems apparent in his writings, would have added to their already great value.

But he has made an important discovery which I believe to be quite new, in what he terms the "flow" of amalgams. By this he means the very remarkable property which many, but not all of them, have, of slowly spreading and yielding under pressure without fracture. In this they differ from an ordinary malleable metal. This squeezes out under a given pressure quickly and then yields no more, whereas the yielding of a "flowing" amalgam is quite gradual, and goes on for a great many hours under the same pressure.

According to him, a small block of dentine can be actually squeezed into a mass of hardened amalgam by a gradual pressure without becoming itself crushed.

What the practical importance of this may turn out to be it is too early to say. I question whether in the mouth it plays so important a rôle as that which he ascribes to it, but it is possible that it may do so.

Another group of facts which he has investigated is the chemical constitution and hardness of different sorts of teeth.

His methods of research I do not think capable of yielding results as close as the figures which he has recorded, but nevertheless they bring out a good deal that is interesting and valuable; amongst other things, that there is a difference between the percentage of lime salts in teeth taken from the same mouth. This result I distrusted, and so was induced to undertake a series of experiments for myself, guarding, as far as possible, against ascertained or suspected sources of error, and I found that he was probably right.

But my own experiments, to be repeated and extended before I dare speak very positively, brought out a difference in the percentage of lime salts between the dentine of incisors and molars taken from the same mouth, the molars containing a larger amount of salts. This difference cannot be explained by the calcification of these teeth having taken place at different periods, because the first molar and the incisor are being calcified at about the same time.

Dr. Black has found that the dentine of all teeth examined by him have an "ample physical strength, elasticity, &c.," and he thinks that specific gravity, strength, appearance, &c., does not vary much with small differences in the lime salts, so that

he is disposed to imagine that the differences must be sought elsewhere.

This requires further research, so stimulated by his example, I have embarked upon a series of investigations, which I had long contemplated, into the chemistry of dentine, which are only, as yet, in their beginning.

But I may mention one or two matters which seem to me interesting. I had always myself regarded Neumann's sheaths as only constituting an infinitesimal part of the whole tooth. But I have found that in the case of elephant ivory, at all events, the Elastin, isolated as completely as possible by the ordinary methods, constituted more than 1 per cent. of the weight of the dry dentine.

Another point is that there appears to be some water in loose chemical combination, because, after drying dentine for many hours at 212° , a further elevation of temperature leads to a further loss of weight. Moreover the decalcification of a mass of dentine gives a weight of Collagen less than the total loss by incineration, so that some part of this latter loss is probably water. And if Collagen be, as it is currently supposed to be, the anhydride of Gelatine, it is pretty certain that this water is in combination with the lime salts and not with the Collagen. This is no more than might be expected, seeing that calcium phosphate prepared by any wet process in the laboratory has at least one equivalent of water in combination, and this combined water is not fully expelled short of red heat. It is possible that the water may be the variable element between teeth of good and bad quality, as, according to Dr. Black, it does not seem to be the amount of calcium salts. Dr. Black also puts forward a suggestion as to the immunity from caries possessed by some mouths, although according to recent ideas the train seems laid for destruction in all; this is, that there may be some substance formed which is very inimical to the growth of the necessary bacteria—a sort of caries anti-toxin, in fact.

But I shall wear out your patience by bringing before you all these heterogeneous matters which, after all, might be more appropriately placed in a paper. I will, therefore, without further comment, hand over my office to the President of your choice, who is far more fitted to discharge the duties of a chairman than I. But I cannot do so without thanking you

for the uniform kindness and courtesy with which my shortcomings in these respects have been met, so that my task has been rendered easy and pleasant.

What the British Dental Association has done for the Dental Profession.*

By I. RENSCHAW, L.D.S.I.

MR. PRESIDENT AND GENTLEMEN,—The reason why I have adopted this title for a paper to be read to you to-day is, that often when advocating the benefits of membership to non-members of the British Dental Association, I have been met with questions such as these: What has the British Dental Association done for the Dental profession, and what is it doing now? Has it fulfilled, or is it fulfilling, the objects which its promoters had in view?

But before I attempt to answer these questions I must ask those of you who have been long enough in the profession, to try to cast your minds back a few years anterior to the passing of the Dentists Act, and to consider the condition of the dental profession at that period. It has been said that comparisons are odious, and in many respects they are, but the comparison with respect to the position of the dental profession at the present time is one with which we may be justly proud, as it is to the operations of the British Dental Association and its branches that this altered and improved condition of things is very largely due. Let us for a short time look at matters as they were then. The condition of the dentist at that period was a position of professional isolation and ostracism; it was a condition of suspicion and jealousy. Professional intercourse was almost unknown; the only facilities for this purpose were afforded by the Odontological Society of Great Britain holding its meetings in London, and the Odonto-Chirurgical Society of Edinburgh, so that the provinces were left to intellectual starvation in a professional sense. There were only three or four dental hospitals in the country, no dental schools, and no dental

* Read at the Annual Meeting of the Midland Counties Branch held at Hull, June 21, 1895.

societies outside London, and it was only by a favoured few that these could be taken advantage of; consequently the ranks of our profession were filled by all classes and conditions of men, most of them without any training in their adopted calling, and many of them with ability, intelligence and respectability of a very low order.

This state of things was not to be permitted to continue, for in 1875 a meeting of dentists was convened in Manchester by our old treasurer, Mr. Sidney Wormald, of Stockport, and was ably supported by Mr. W. H. Waite and Col. R. Rogers, for the purpose of considering the question as to how to improve the condition of the dental profession, and at that meeting the following resolution was passed:—"That it is desirable that a *Committee* be formed to see what steps can be taken to arrest the continual influx into the profession of illegitimate practitioners, by the adoption of the principles of registration and compulsory education." As a proof of the popularity of the movement the sum of £200 was promised in the room to defray the expenses of such committee in drafting an Act to regulate the practice of dentistry, and appealing to Parliament with it.

Thus the dental reform movement was started with Sir John (then Mr.) Tomes, Sir Edwin Saunders, James Smith Turner, James Parkinson and a host of others at its head, to help it forward and direct its course, and such was the energy and skill manifested, that in three years from the date of the Manchester meeting, the Legislature gave us an Act of Parliament to regulate the practice of dentistry, and to make registration and professional education compulsory, thus ensuring to the public the certainty that men entering the profession from that date should be men of education, having a thorough practical training in all that pertains to the surgical and mechanical branches of it.

The aim of the Reform Committee thus being accomplished, the committee was dissolved, and was immediately re-organised under the title of the British Dental Association, having for its objects:—

The promotion of dental and the allied sciences, and the maintenance of the honour and the interests of the dental profession, by the aid of all or any of the following:—

(a) Periodical meetings of the members of the Association,

and of the dental profession generally, in different parts of the country.

(b) The publication of such information as may be thought desirable, in the form of a periodical journal, which shall be the journal of the Association.

(c) The occasional publication of transactions, or other papers.

(d) The grant of sums of money out of the funds of the Association, for the promotion of the dental and the allied sciences, in such manner as may from time to time be determined on.

(e) The maintenance of the spirit and provisions of the Dentists Act, by such lawful means as may be necessary.

(f) The encouragement of the Dental Benevolent Fund, for the relief of decayed or necessitous members of the profession.

(g) And such other lawful things as are incidental or conducive to the attainment of the above objects.

And now I come to the question with which I commenced this paper—What has the British Dental Association done for the dental profession, and has it fulfilled, and is it fulfilling, its original objects? To which I reply emphatically—Yes!

In the first place, let us look at its operations from an educational point of view.

As I have already intimated, prior to the dental reform movement, men were ostracised, they stood aloof from each other, they occupied positions in contracted circles, each being content to remain within that circle, and to make it a little world of his own, therein to live and move and have his being. There was no communication from without, and no offer of professional intercourse from within; the dentist of that period was inflated with a sense of his own importance, yet afraid that by entering into friendly relationships with his professional brethren the poverty of his knowledge and his over-estimated ability should be discovered by them.

But since the establishment of the British Dental Association this condition of things is changed, as, by the facilities offered by the Association and its nine branches, men have been induced to come out of their seclusion, rubbing shoulder to shoulder with each other, reading, listening to, and discussing papers; performing and witnessing demonstrations; and thus

a general awakening took place. The best men of the day were induced to come forward to give to the Association the benefit of their scientific research, their practical knowledge and their manipulative skill, whilst those who shyly held aloof and stood afar off are now regular attenders at our meetings, taking the deepest interest in all that goes on, particularly with reference to the demonstrations, and as the "busy bee gathers honey from flower to flower," so do they gather ideas and information from chair to chair and bench to bench, in order that they may perfect themselves in their work and excel in the character of the services which they shall render to their patients.

There is no reservation of professional secrets or methods of practice, but on the contrary a spirit of emulation exists as to how much each member can do to increase the popularity and success of our gatherings, by expanding our ideas and increasing our knowledge.

What has the British Dental Association done in providing the dental profession with a dental literature?

In the first place the Association has provided a first-class journal, in which the various meetings of the Association and its branches are recorded, and which has proved to be a valuable medium for the interchange of ideas and the dissemination of professional knowledge, and which, as a journal of a specialty, will compare very favourably with the medical journals of the day.

Some of the individual members of the Association have contributed valuable text-books on the various branches of our art. I will not include the works of Sir John Tomes and Mr. Charles Tomes, as these were published before the formation of the Association, but I refer particularly to the works of Smale and Colyer on "Diseases and Injuries of the Teeth"; Coleman's "Manual of Dental Surgery and Pathology"; Constant, on "How to give Gas"; Mummery on "Some Points in the Structure and Development of Dentine"; Quinby, on "Notes on Dental Practice"; Rymer on "Notes for Dental Students"; A. Hopewell Smith on "Dental Microscopy"; Silk on "A Manual of Nitrous Oxide Anæsthesia"; and Underwood's "Aids to Dental Histology and Dental Surgery."

These, I venture to say, would not have been written for

many years to come, but for a growing need engendered by a constant seeking after knowledge, of text-books of a more varied and comprehensive character. They are clearly the outcome of the operations of the Association.

The paper read by Mr. George Campion at the Annual Meeting in London in 1891 on the "Extraction of the Six-year Molars as a Remedy for Dental Irregularities," induced Mr. George Brunton to suggest that at the next annual meeting, which was to be held in Manchester in the following year, a special feature should be made of the exhibition of models representing all kinds of irregularities of the teeth, together with the different methods of treatment. This suggestion was carried out, and a collection was made providing an exhibition which was at once unique and educational in the highest sense of the word, and thus becoming a valuable object lesson to practitioners, in the different methods of treatment of difficult cases which so often come before them. This result could not have been accomplished but for the facilities offered by an Association such as ours.

A paper was also read by Mr. W. M. Fisher, of Dundee, on "The Compulsory Attention to the Teeth of School Children, and of the Army and Navy," showing the necessity of such an examination, and suggested that statistics be obtained from schools in different parts of the country, and from children under different conditions and in varied spheres of life; the object being to show, by means of statistics, the amount of dental disease existing among children, and to show the necessity of proper provision being made to deal with the evil. This resulted in a committee being formed for the purpose of inaugurating a scheme of examination, and in 1891 the Committee presented their first Report, showing that examinations had been made in the teeth of school children in a number of schools (I believe between forty and fifty), embracing reformatories, industrial schools, orphanages, National and Board schools, by practitioners qualified to undertake these examinations.

The objects, as stated in the printed report, were (1) "To acquire a more exact knowledge of the condition of children's teeth at various ages; and (2) to show, by means of the facts thus acquired, the disabilities under which children frequently suffer in their growth and development, and the

important bearing this condition has upon the future health of the individual."

The statistics and data got together by this Committee could not long remain in the hands of the Association, and it soon attracted the attention of the Local Government Board and at once became a matter to which it attached a great deal of importance—so much so that at the present time there are nine parochial schools in the London district alone with paid dental surgeons attached, whose duty is to render conservative treatment to the teeth of the children attending those schools, the salaries of the dental surgeons varying up to £100 per annum, according to the number of scholars in each school, and the number of attendances for that purpose. And now, whenever a grant is asked for from the Local Government Board for parochial schools, and before any such grant is made, an enquiry form is sent out, asking what provision is made for the dental treatment of children attending the school, for which the grant is required. This, I think, shows that the Association *is* fulfilling the aims and objects as stated in its scheme of operations.

What has the British Dental Association done for the dental profession?

The universal idea of the profession seems to be, that its sole object and function ought to be to maintain the spirit and provisions of the Dentists Act, and that the other sections of the scheme, as stated in the articles of Association, should take a secondary place; and because the Association does not undertake wholesale prosecutions against offenders, in districts where individual members of the profession reside, they ask in a captious tone, "What has the British Dental Association done for the profession?" But before I reply to this question, I will just direct your attention to the fact that there are at the present moment 4,874 United Kingdom dentists on the Dentists' Register, whilst only about 900 are members of the British Dental Association, thus leaving 3,974, or nearly four-fifths of the entire dental profession, unattached. These are the men who button their pockets up, the men who stand aloof from their neighbours, who carp and cavil because some offender in their immediate neighbourhood is not stopped; and when approached, still keep their hands upon their pockets and ask, "What has the British Dental Association done for the dental profession?"

The majority expect the minority to purge the profession of the parasites by which it is infested, and forsooth because the Association does not undertake batches of cases for prosecution, and cleanse the place of their pollution, they vote it a delusion and a snare, loudly complaining of what it has not done, and energetically exclaiming what it *ought* to do. In cases of alleged infringement of the Dentists Act, these men are the first to send up cases for investigation, but beyond that they will not do anything, either in the way of procuring or substantiating evidence, or assisting to defray the expense. The Association must find the music and pay the piper.

But although the *sole* object of the Association is *not* alone to maintain the spirit and provisions of the Dentists Act, the Business Committee and the Representative Board do devote a large amount of time and consideration to cases of alleged infringement of the same.

It has been said that it is possible to drive a coach-and-four through any Act of Parliament. Well! the Dentists Act has not been singularly exempt from this, as by the 37th, or Apprentice Clause of the Act, apprentices or pupils who were engaged in the acquirement of professional knowledge at the passing of the Act should be entitled to registration under certain conditions.

This at once became an easy road to registration, without any special education or fitness warranted by examination; and so well used did this way become, that more names were placed upon the Dentists' Register by virtue of this clause than were placed upon it by virtue of examination, for during the first twelve years that the Register was closed, 312 names were registered by virtue of this clause, and only 264 by virtue of special training and examination. Registration in this manner would have gone on indefinitely, if the attention of the General Medical Council had not been drawn to the anomaly by members of the British Dental Association, through Dr. Banks of Liverpool. But the facts having been placed before the General Medical Council, this method of obtaining registration was definitely stopped by the obnoxious clause being placed in abeyance and rendered inoperative.

The Association has also undertaken a number of prosecutions against offenders under the Act, and so careful have the executive been in the selection of cases, that success has

attended every effort; prosecutions have been undertaken where different phases of implying by description have been selected, thereby establishing in the Law Courts definitions as to what constitutes an offence against the Act by *implication* or *description*, and for which an action may successfully be taken. I cannot in the time at my disposal enumerate the cases fought and won, or the character of the cases considered, but this I must say, the Association has not been asleep.

Some of our members ask, What is the British Dental Association doing for the profession?

It is not my intention to criticise the action or policy of the executive of the British Dental Association, because I believe it is honestly doing its best to accomplish the work which it set out to do. I can only tell what I know. It has been my pleasure and privilege to attend the Business Committee and Representative Board meetings for five years; every case presented by me has been carefully considered and dealt with upon the facts, and if necessary referred to the Association solicitor to be further dealt with if practicable; and this may also be said of cases sent up by others—every case sent up is duly considered, and dealt with according to its merits and a great amount of time is spent over them, but as the proceedings are *in camera*, the Business Committee and the Representative Board do not get credit for doing anything. It is not in prosecutions alone that the Association has been successful, but in the large number of cases which have been disposed of without having to resort to legal processes, in which offenders have either consented to refrain from further infringements, or have hurriedly left the district.

I must here remind our members that when action is taken against any person for illegal practice, that the fullest information should always be forwarded to head quarters, bearing in mind the fact that the onus of proof rests upon the prosecutor, and that a failure might lead to disastrous consequences.

In conclusion, I must commend the attention of our members to the Dental Benevolent Fund of the British Dental Association—a fund established for the relief of those members of our profession who have been unfortunate, and who have been unable to make provision for either sickness or old age, or maybe death has overtaken them and they have often left behind them a widow and orphan children. In many cases

the practitioner has been enabled to tide over a temporary financial difficulty by the well-timed assistance rendered him by the committee of the Benevolent Fund, or sickness has overtaken him, when his weary hours of suffering have been comforted and cheered by help from our funds, and when, after a lingering sickness, the end has come, his widow has been put in a position to enable her to earn a livelihood for herself, whilst grants have been made for the maintenance and education of the children. Boys have been apprenticed and the expenses of hospital practice met, and this without ostentation or publicity, for beyond the person who first brings information of the cases to the Committee, no one outside knows anything as to who the recipient is. One grand feature is that the operations of the Fund are not confined to members of the Association, but in a majority of instances the benefits of the Fund are accorded to unattached members of the profession and their families.

I think, in conclusion, that I have shown that the 900 members of the British Dental Association have done something for the dental profession, and infinitely more than the 3,994 members of the profession who are looking on. What are they going to do?

What the British Dental Association ought to do for our Profession.*

By T. GADDES, M.D.U.S.A., L.D.S.ENG. AND EDIN.

HAVING been invited to address this meeting upon the subject of what the British Dental Association ought to do for our profession, I shall, for the nonce, extend the question and inquire what the profession ought to do for the profession? "God helps them that help themselves." Has the profession helped itself as much as it might or ought to have done? No, is the unfortunate reply. It is a commonplace fact, which admits of no question, that the British Dental Association, with its forerunner the Dental Reform Committee, has done more for the profession in this country than

* Read at the Annual Meeting of the Midland Counties Branch held at Hull, June 21, 1895.

any other society or combination in the whole history of our calling. The profession, therefore, ought to rally round the British Dental Association. Members who stand aloof ought to give their support and the stimulus of their fellowship to the Association which has done so much, and to which they, as members of the profession, are greatly indebted. Because this or that particular view of what the Association ought to do, or ought to have done; or for the reason of the case of a certain neighbour not having been taken up—cases often impracticable and frequently inadequate in data—these are not justifiable reasons for indifference, or the still sadder attitude of seceding from the Association. This, then, is what worthy members of the profession ought to do for their own calling and their own advantage—join the Association. According to the latest returns there are on the Dentists' Register 1,422 qualified practitioners; only half of them (707) are members of the British Dental Association. Of the 3,479 registered without any qualification, only 163 belong to our Association, giving a total membership of 870.

Besides those 715 qualified dentists, there are quite as many, or more, reputable practitioners who ought to support the British Dental Association by their membership. If there had been given a larger sympathy, doubtless the Association would have accomplished more than has been done. Even now, were ways and means at hand, a stimulus would be given for increased activity. The Association is only one-third as strong as it should be. Can—nay, ought—not the Association to make some special effort to bring within its fold that outside two-thirds, whom we may regard as sheep in sheep's clothing?

There have been many and various declarations of "What the British Dental Association ought to do for our profession:" (a) To extinguish the artificial teeth companies and associations of unregistered practitioners; (b) to suppress all advertising dentists; (c) with one *grand coup* purify and level up the conglomerate mass now upon the Register. These are some of the views entertained of the duty of our Association. Those "oughts," as matters now stand, have each but one reply—Impracticable. How any thoughtful person, capable of reflecting upon the nature of the case, can entertain, let alone express, those opinions, is astounding. I am sure that

this most progressive section of the British Dental Association cannot subscribe to any such dreamy views of practical duty.

(a) To secure an Act to make penal an unregistered person practising dentistry for gain would be most desirable. To in that manner fence round the practice of dentistry, or, as a parallel case, even protect the practice of medicine from the herbalist, the bone setter, and the quack, would be of undoubted benefit to the public. And surely the public requires to be protected from this huge and dangerous parasite. That a measure of this kind shall come within the range of practical politics in this age, when the supposed liberty of the subject is avowedly worshipped, our legislators may shortly have an opportunity of showing. The history of the Dentists Bill in 1878 is a mild example of the difficulties of securing what is so often termed class legislation. To obtain parliamentary power of that kind necessitates determination, discretion, policy, and finance. Let the Association—rather, I would urge, let the profession—do its utmost to secure the passing into law the amendment which refers to the Dentists Act, and proposed to be included in the Medical Acts Amendment Bill. The desideratum is that the amendment shall become law—whether by this channel or by that is of minor importance. We should therefore take care that dissension on the minor point does not wreck the ship.

To those who may build castles in the air, if this amendment do become law, I would venture to re-utter the word of warning which I wrote in the editorial pages of the *Dental Record** on the Amendment to the Medical Acts, 1886, which, as affected the Dentists Act, included a section relating to unregistered practitioners (this very subject): "Though this expository Amendment of the Dentists Act is intended to further circumvent the mystic sham of the pretender, there will remain some means by which the advertiser may extol his virtues and trade upon the unwary and credulous public." It is in this way—a distorted sociological conception—that the total suppression of the quack is impracticable.

(b) The Association will continue, as in the past, to exercise its influence to modify the grossness of the advertisements which meet the public gaze. And this Branch, at least, will

* *Dental Record*, vol. vi. (1886), p. 332.

not be lacking in effort to aid the Association in urging the Medical Council to exercise its authority in regard to "infamous or disgraceful conduct in a professional respect." That the executive of this Association might have been more diligent, more ardent and less timorous in that disagreeable business, very many members have openly admitted. Now that the movement of purgation has been inaugurated, the Representative Board ought to follow up the action of the Medical Council until a precedent be established or a test case settled. Yet, rest assured of this, notwithstanding all that effort and exercise of legal power to purify the profession, the advertising practitioner—in our profession as in other callings, in this country as in other regions of the world—will continue to exist. But, withal, there will be this satisfaction and consolation, he will be a less objectionable individual, and his display of arrogance and alluring clap-trap less offensive to the good taste of the public and to professional decorum. It is in this sense that the suppression of all advertising dentists is impracticable.

(c) With regard to purifying and elevating the conglomerate mass now upon the Register, I have already,* though tersely, said enough: "The working of the Dentists Act, 1878, the influence of the British Dental Association, and the elevating tendencies of education (shall I use the old watchword 'compulsory education'?)" and (let us hope) the development of "a reverence for the principles of discipline, and not a reverence for the power which enforces that discipline"—those factors have, in the past, wrought a marked improvement, and they, with time, will continue to purify the profession of the less scrupulous of the registered practitioners.

Of some of the questions which ought to receive attention, or more attention, and upon which action ought to be taken, I shall now speak.

At the annual meeting of the Association in March, 1894, a resolution was passed concerning the regulations for the mechanical training of pupils. But what has been done? After a lengthy discussion which, as stated in the editorial pages of the Journal, "showed that a serious defect existing

* "The Ethical Status of the Dental Profession," JOURNAL OF THE BRITISH DENTAL ASSOCIATION, p. 154, *et seq.*

in our system of education was recognised by the members generally," the following resolution was unanimously agreed to:—"That it is deemed desirable to have a preliminary examination in mechanical dentistry for students before they enter upon their surgical training." Almost a year later the same subject was discussed by the Representative Board; yet the Board, by postponing the discussion *sine die*, failed to carry out to any practical issue that unanimous expression of opinion or resolution of the Association. The "serious defect" has been recognised for years past, and efforts have been made by several of the teaching bodies to, in a way, meet the evil. Withal, the executive of our Association has, in its own wisdom, decided not to take any further action in the matter.

The examinations for the L.D.S. should embrace all the subjects of the curriculum. This is not so at the R.C.S.Eng., where chemistry, metallurgy, medicine and materia medica are not inquired into; yet the candidate has to be signed up for his attendance on lectures upon those studies. The order in which the several items of the curriculum are taken likewise requires amending. The London examination, also, should be divided. All these matters have been pointed out years ago and discussed time and again; still, no progress has been made. The Association ought to appoint a Committee of the deans and certain of the teachers of the several dental schools, to report upon the whole subject of the curriculum and examination for the L.D.S. The anticipated official report of the Visitor of the Medical Council, and the recommendations of the British Dental Association, based upon the report of its influential Committee, would have some good effect. A recommendation from that source would be opportune, and, in conjunction with the letter of Dr. John Smith, read at the recent meeting of the Medical Council, might be reported upon by the Education Committee at the next meeting of the Council. The policy of further delay I do not agree with. Action—still better, in this instance, concordant action—will yield quicker and probably better results than the procrastination of adjourned discussions, or the limbo of the *sine die* shuffle.

The question of representation on the Medical Council ought to be persevered with. Probably the only effective

movement would be by getting parliamentary power; and a clause in the Medical Acts Amendment Bill, now being prepared for Parliament, might be the least expensive method of procedure.

That the L.D.S. should be the *sine quâ non* for the use of the title dentist all dentists are agreed upon. But just how this amendment to the Act should be accomplished—the section restored as in the original Bill—is the difficulty. In attempting to obtain in one grasp all that could be wished for, the more important powers might easily be denied and nothing gained.

The work of the Association in carrying out the spirit of the Dentists Act is increasing, and it is no light task upon the executive. If the business is more than can be got through, even when the Board meets seven times, as last year, would it not be advantageous to lengthen the hours of each meeting—say from 2 till 6, instead of from 3 or 3.15 o'clock? More frequent meetings would augment the already heavy tax upon provincial representatives.

Having already exceeded the time allotted for this paper, I shall conclude with the following summary of what ought to be done:

The profession at large ought to help itself more than hitherto has been the case.

All reputable members of the profession ought to be members of the Association.

All registered dentists ought to look after their own interests—to say nothing of the public welfare—in helping to secure certain amendments to the Dentists Act: (a) as directed against unregistered parasites; (b) to secure representation on Medical Council; (c) that the L.D.S. shall be necessary for the use of the title dentist.

The Representative Board ought to follow up the first step of the Medical Council with regard to advertising, and secure a ruling upon “infamous or disgraceful conduct in a professional respect.”

Definite and prompt action ought to be taken on the question of professional education and examination.

The discussions and resolutions of the Association ought not to be passed over by the Representative Board.

The executive ought to improve their means and methods to better grapple with the increasing business.

Finally, as "Britishers," grumbling and otherwise, we should be grateful for the benefits that the British Dental Association has secured.

How the British Dental Association can help the Public to better Dental Service.*

By T. E. CONSTANT, L.R.C.P.LOND., M.R.C.S., L.D.S.ENG.

MR. PRESIDENT AND GENTLEMEN,—When the able and energetic secretary of our Midland Branch suggested as the title of the paper he desired me to read at this meeting, "How the British Dental Association can help the Public to a better Dental Service," I adopted it with some little hesitation, because I foresaw the risk that I should say much that would be merely a repetition of the previous paper. In fact, I feared that I should be placed in the position of the politician that Mark Twain tells us about, who, having carefully prepared a speech, stocked with apt quotations and funny anecdotes, committed it to memory only to find when the occasion arrived for its delivery that previous speakers had made use of the very anecdotes and quotations he had been at such pains to prepare, and he was left to face his audience without a word to say for himself. Lest I should find myself anticipated in a similar manner, I shall adhere strictly to questions, the satisfactory settlement of which will advantage the public primarily. In other words, I shall say nothing as to the immediate remedy of existing abuses, as that comes more within the scope of the previous paper, but shall indicate as briefly as possible the lines upon which our Association should proceed to ensure to the public efficient dental aid in the future. Although the measures that might be adopted with that end in view are many and various, in my opinion the following are the most important:—

(1) The standard of the preliminary examination required of candidates for the L.D.S. should be raised.

(2) A searching examination in mechanical dentistry

* Read at the Annual Meeting of the Midland Counties Branch, held at Hull, June 21, 1895.

should be made compulsory—such examination to be passed by dental students prior to their entry at a dental hospital.

(3) The standard of the L.D.S. examinations should be uniform—that is to say, there should not be one standard for England, another for Scotland, and another for Ireland.

(4) None but licentiates in dental surgery should be admitted upon the Dentists' Register, or be allowed to style themselves dentists.

It may not be at once apparent to you how the adoption of these measures should attain the object we have in view, but if you will for a moment consider the present condition of the medical profession, you will, I think, see the point of my suggestions.

The prevalent evil in the medical profession is the existence of low class dispensaries, medical clubs, *et hoc genus omne*. There are committees formed to deal with these things, but it seems to me that unless they strike at the root of the matter, which is the overcrowded state of the profession, these committees will have met in vain. Let us, then, be worldly-wise, and profit by the mistakes of others. It is easier for us to prevent overcrowding than it is for our colleagues in the medical profession to remedy it, and I know no better way, and no fairer, than by raising the standard of the preliminary examination.

"But how will this advantage the public?" you ask. In the first place, it will ensure it the services of a better educated class of dentists than the present. Secondly, it will prevent that keen competition which, however much it may benefit trades, always tends to degrade professions. There is no profession the members of which are so beset with temptations to stray from the path of duty as are the members of our own. It is therefore very important that undue competition should not render that path more thorny than it is at present. The dentist who finds it a severe tax upon his moral nature to fill the roots of an upper second molar for two guineas might resort to rhizodontrophy if stress of competition reduced his fee to half-a-crown, and the public would suffer accordingly. I think, therefore, that even if regarded merely as a means of preventing an excessive competition that would be disastrous in its results, there can be no doubt as to the necessity for a higher standard of preliminary exami-

nation. Other advantages which are too obvious to need enumeration must occur to all of you. I may therefore pass to the consideration of my second proposal.

Very often during the last six or seven years I have urged upon our profession the necessity for reform in the matter of the mechanical training of dental students. My statements with regard to it were confirmed two years ago by Mr. Watts, whose appointment as practical instructor of mechanical dentistry at the London Dental Hospital placed him in the best possible position for acquiring accurate information upon the subject. I do not intend to repeat my arguments in favour of reform—they must be familiar to most of you—but only to record my opinion that not much progress will be made until an examination is instituted.

With regard to my third suggestion, I may remind you that Mr. Tomes has been appointed visitor to the examining bodies which grant a licence in dental surgery, and I have no doubt the public will benefit thereby. At the same time, I do not think that any harm would be done if our Representative Board were to carefully consider the matter and make some attempt to reconcile the requirements of the various examining bodies which, at the present time, differ very materially.

The question raised by my fourth proposal I have fully discussed elsewhere, but it is sufficiently important to excuse reiteration. There are at present more than 30,000 medical practitioners, all of whom have a legal right to style themselves dentists, although not 1 per cent. of them has received special instruction in dental surgery. It is not difficult to foresee what would be the result to the public if several thousands of these undertook the practice of dentistry! Yet, as soon as we have raised the tone of our profession by the methods which have been suggested here to-day, it is far from unlikely that this will happen. It is therefore the bounden duty of our Association to prevent such an incursion, which would do more harm than the permissive clause of the Dentists Act, which left the public a prey to any unscrupulous outsider who chose to represent himself as a *bona-fide* dentist.

Gentlemen, it is the object of this paper to provoke discussion. I have placed one or two things before you that I believe well worthy of it, and had there been time I should

have mentioned others. I trust when an opportunity occurs of bringing forward the points I have omitted, they will be listened to with the kind attention you have accorded me to-day.

Some Methods in Practice.*

BY R. P. LENNOX.

IN taking possession of the chair to which you have done me the honour to elect me, I am fully sensible of the kind indulgence you have already shown me, and can only beg you to continue that indulgence with regard both to my general conduct in the chair and to the address which it is now my duty to deliver to you. The difficulty of choosing a subject for such an address—in many cases, I can well imagine, no slight one—has been in my case practically non-existent, since there is but one subject upon which I could possibly have anything to say. The difficulty with me has rather been what account I could give of my ideas and experiences in mechanical dentistry, which could possibly interest you for the few minutes I propose to detain you. After some consideration it occurred to me that, perhaps, the likeliest method of arousing your interest was to provoke your critical faculties by contrasting some of the methods I have come to prefer with those given in the text-books, concluding with a few general remarks such as a comparison of this kind and a long experience are calculated to suggest. With a view to carrying out this idea, I have recently read, somewhat cursorily, what Balkwill, Hunter, and Richardson have to say on mechanical dentistry, being directed to the last-named by finding that his book is the adopted text-book of the Dental Hospital of London, and, for aught I know, of all such hospitals and institutions. One of the things which has long struck me most forcibly has been the comparative isolation in which each of us works, at any rate as regards mechanical work, and the difficulty of getting to know how others work. For myself I am bound to say that I owe

* The Presidential Address delivered at the Annual Meeting of the Eastern Counties Branch, June 22.

little, at any rate consciously, to any text-book whatever, having been led into my present method of practice by endeavours to solve the problems which present themselves from time to time with the aid of what I have always valued as an excellent early training under a thoroughly practical man. One result of this is that I am tempted, possibly with undue prejudice, to find much that is given in the text-books very annoying to read, much that is at once tedious, unpractical, and bewildering to the student. However, I will start the comparison, and you shall form your own conclusions.

To begin with, there is the method of taking an impression, for which we are constantly told that nothing is equal to plaster, while I as constantly wonder whether those who recommend it really use it in practice. If they do, they must entirely disregard the trouble to themselves and the discomfort to the patient, and that for the sake of obtaining what, after all, they do not want, viz., a perfect impression of the mouth with the soft tissues absolutely undisplaced. Let us consider an edentulous case for which we propose to make a suction upper. If we obtain an impression with the soft tissues undisturbed, it is obvious that our plate will ride upon the harder parts of the mouth, while it will be free to displace the softer, and so yield, at every effort of mastication, to the fullest extent that any plate which could in any sense be called a fit could yield. On the other hand, when an impression is taken with composition, the operation is as cleanly and as little disagreeable to the patient as such an operation can be, the pressure of the composition displaces the soft tissues just as the plate will afterwards displace them, the impression obtained with good composition is as sharply defined as any plaster impression, and the resulting plate sits firmly at all points. We next come to the question of making a base-plate, whether for gold or vulcanite work. It would be impossible in the time at our disposal to go fully into all the dodges given by the text-books for securing a well-fitting gold plate. As many as three zinc dies and three lead counters are recommended, and are no doubt often necessary in consequence of the methods pursued. The first counter is made by pouring lead upon the exposed face of a zinc embedded in sand. The result is that the counter offers no guide for the die, which is therefore liable to strike awry, and to obliterate

details in the counter. Hence the need for two and even three counters. My plan is to wrap a roll of clay around the only zinc I use, and dip the latter far enough into the ladle of molten lead to cover the clay. The effect of this is to give all that is aimed at in the shallow counter without sacrificing the strength and the guide afforded by a deep counter. Accuracy in directing the blows and distributing the force of them is also gained by the use of a Pearsall sand-moulding flask, the advantages of which seem surprisingly long in gaining recognition. A sort of bastard offspring from it is, indeed, figured and described in Richardson, but it has not the adaptabilities of the Pearsall, while it pirates, without acknowledgment, its most striking feature—the cone. When such a cone is cast with the zinc, the plaster model need not be more than an inch deep at the heel, the zinc can be readily grasped in a vice and otherwise readily handled, it never cracks under the hammer, and, to cut a long story short, I should be very sorry to have to once more do without the flask. With such a die, and a counter made as described, perfect accuracy in directing the blows is obtained, and the life of the counter is much prolonged, so much so that I find one zinc die, one lead, and one tin counter sufficient for all purposes. By the way, I always swage in the hand, my hammer weighs $2\frac{1}{4}$ lbs., and one result is that the lead counter is not spread to anything like the same extent as when the swaging is done on a block. I should have said that I never use a lead pattern, but cut a rough one in paper rather larger than the required plate, the use of the clay above referred to rendering this possible without difficulty. Time and trouble in the preliminary adjustment of the plate are thus both saved. I may add that I have entirely given up the use of suction chambers, whether in gold or in vulcanite work; they are at all times harmful, and, ultimately, by filling themselves with the soft tissues, become inoperative, the better made the chamber the worse the result.

Another important point in which my practice differs from that given in the text-books is connected with the making of a matrix plate for setting up teeth in vulcanite cases. A rigid and close-fitting plate is of the first necessity in such cases, and the more quickly it can be made the better. Many ways are described in the text-books for making matrix plates, but

I do not hesitate to say that they all fail in one or other of these essentials—either they are not rigid or they take too long to make. A fusible metal plate, on the other hand, is both rigid and quickly made. With such a plate we may proceed to take the bite with confidence and at our leisure, and those who use a wax or gutta-percha plate for the purpose, especially if they make dummy bites, will appreciate what that means. But a dummy bite is another of those things with which I contrive to dispense. The amount of carving and shaping they require is too much for my patience (? patients), and after all they give no indication of what the teeth will look like ultimately. My plan is to set up temporarily, on a composition plate, all the teeth in the lower jaw, and, on a fusible metal plate, the incisors and canines in the upper jaw. In the remaining spaces I adjust blocks of soft wax and proceed to take the bite. As the metal plate keeps up even better than a finished plate, and the teeth are readily re-adjusted on it, if need be—though in general careful observation of what is wanted is sufficient—the work of obtaining a bite in this way is attended with as little trouble and difficulty as possible, and the marks made by the bicuspid and molars of the lower jaw in the soft wax blocks of the upper suffice to determine the articulation when the plates are removed from the mouth.

We now want an articulator—a thing over which what an amount of perverse ingenuity has been expended! Only the other day I saw a poor fellow working with an articulator which compelled him to handle both the models at once throughout his work, and where was the compensating advantage? My advice is, use a simple slab bite with an orifice for viewing the interior of the mouth, and make it of fusible metal.

We will now suppose the teeth set up. If it is a vulcanite case, and springs are to be used, I depart once more from the usual practice, and vulcanise into the positions intended for the bolts some pieces of knitting needle taken back to a blue. These are afterwards readily withdrawn by heating the ends with a blowpipe and using a strong pair of pliers, and are then replaced by the bolts. The advantage of this method is that, when the swivels are worn out, the bolts are easily removed and the swivels renewed. To support the spring and keep it from injuring the mucous membrane, the text-books

recommend a ledge of vulcanite on the lower set ; Richardson, if his diagrams are to be credited, also recommends one on the upper. The rest on the upper is, of course, worse than superfluous. In the lower, to effect the same purpose as the vulcanite rest and avoid friction on the spring, I drill, whenever possible, a small hole just under the stem of the swivel, close to the eye, and insert a piece of tapped wire.

When it comes to flasking, there are again several points as to which, with a view of saving time, I do not follow the text-books, but I will not weary you with these minutiae. The one point upon which I wish here to insist is that the original model should never be sacrificed in vulcanising. It is wanted afterwards to test for, and correct the results of, contraction, while if the matrix plate be rigid and fit the original model closely, as it should do, a second model, quite as good for its purpose as the original, can be cast into it. By the way, I may perhaps usefully repeat here that I insert a piece of match stalk as a stay between the extremities of a lower before investing, thus obviating the tendency of the plate to contract when vulcanised. Again, there is a point in connexion with vulcanising on a gold base, not, I think, referred to in the text-books, upon which I gained a valuable hint from Mr. W. Fawcett, of Cambridge. The Americans, I see, claim that vulcanising on gold was introduced by them as far back as 1859. In any case I never saw it done, and consequently never did it till 1867, and it was for years after that a trouble and a puzzle to me that the edge of the vulcanite was never in absolute contact with the gold, nor could I by cutting back produce an edge that was in contact. Happening to mention this to Mr. Fawcett, I at once gained the hint that all that was necessary was to scrape, polish and rouge, not, as Richardson tells us, the part of the plate not to be covered, but the part to be covered by the vulcanite.

There are many other points in practice as to which, if I went on, I should have to plead guilty to heresy, but I have perhaps said enough by this time to make clear my object in this address. The result of reading the text-books has been to show me that my methods differ in more ways than I should have suspected from those commonly pursued, at any rate so far as these have got into print ; and I have referred to a few of these not because I feel at all bigoted about my own

methods, but because they show, I think, how desirable it is that we should have opportunities of seeing one another work. Before I conclude, however, I should like to be allowed yet another fling or two at Richardson. You will hardly believe, unless you are familiar with the book, that in the course of no fewer than 656 pages of letterpress there is not a single allusion to what I consider as indisputably the very best work in mechanical dentistry—I mean tube teeth. Lastly, to have done with Richardson, I must note that he quotes, without a word of disapproval, from Professor Wilbur F. Litch the statement that in fitting a collar crown the finer and final adjustments as to height, contour, alignment, &c., must be perfected at the mouth. Now, if there is a thing to be avoided, by all the means possible, it is this constant working at the mouth. It wearies, annoys and disgusts the patient, to say nothing of the resulting pain; it tries the nerves and wastes the time of the operator, and gains for him absolutely nothing which he could not get, without worry and discomfort, from a properly taken cast.

I have now dealt, I think, with all the points I have desired to bring before you, but before sitting down there are a few remarks which, if you will kindly grant me your patience for a brief while longer, I should like to make.

My partner and I have had the misfortune to be called in to make a splint for a patient after an operation for epithelioma. Now it can hardly be disputed that the best form of splint for a divided jaw is one of vulcanite, allowing the crowns of all the teeth to come through and antagonise with the uppers, and it is obvious that such a splint can be made much more readily if the dentist be called in before, and not after, the surgical operation. I should like, therefore, to take this opportunity of impressing upon surgeons in general the advisability of sending early for a dentist, whether in cases of epithelioma or of fractured jaw. It may be worth while to add that a vulcanite splint may be secured in position by drilling through it in two places in such a way that pins may be put through which will pass between adjacent teeth and hold the splint down.

I have referred already to the desirability of our seeing one another work, and I should like here to point out one way in which this might be done. When in London the other day I

paid a visit to the institution which has been and is being so ardently promoted by our friend Mr. Cunningham. To those who have already seen the institution I need not describe the excellence of its equipment. To those who have not, I can only say, Go and see it. Whether such an institution can be made self-supporting it is not now my purpose to consider, but that it will be useful if it can, no one, I think, who has seen it will deny. My purpose in mentioning it now is to point out the opportunities it offers for post-graduate teaching as well as a varied teaching of younger men. The method by which, as I understand, a young architect acquires his teaching appears to me here to be very much to the point. He articles himself, say, to some one eminent architect in London, and forthwith begins a course of study at the Royal Academy. This school is visited for periods of, I am not sure of what length, but, say a month at a time, by eminent architects, who set the student to design, say a tower, or a house, or a church, or a club, or dental hospital, or what not, under the supervision of the visitor for the time being. In this way the students learn not only what the architect to whom they are articulated can teach them, but the style and methods of all the best men in London. I need not labour this further. The advantages which would attend similar teaching for dentists must be too plain to need insisting on. My point is that the institution, with its roomy space and fine equipment, is just the place where such teaching could be given, and could be given, too, without risk of arousing the jealousy which would naturally attend an attempt to introduce visiting into any of the existing schools.

Trusting that in this, or in some better way—if better can be found—the rising generations of dentists may have the opportunity of securing that varied teaching and experience which appear to me so desirable, I will now conclude by tendering to you my hearty thanks for the patience with which you have heard me.

RAPID STAINING OF FRESH TISSUES.—A method of rapidly staining fresh animal tissues, described by Cullen, is to be found in the *British Medical Journal* for August 3. The sections cut from frozen material are immersed in 50 per cent. formalin solution (aqueous) for five minutes, then in 50 per cent. alcohol for three minutes, and absolute alcohol one minute. After this they are washed, stained and mounted.

MINOR NOTICES AND CRITICAL ABSTRACTS.

On Malignant Disease of the Peridental Membrane.

By A. HOPEWELL SMITH, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.

DURING the course of some recent investigations in the subject of the patho-histology of the peridental membrane, I found among my specimens several marked examples of a new growth intimately associated with and springing from the fibrous periosteum of the teeth—a condition which seems to have escaped the attention of the writers of surgical and dental text-books. These periosteal tumours present on examination appearances which warrant more than a passing notice, and afford a subject of great interest and importance to general and dental surgeons alike. The cases under consideration are not absolutely unique. For instance, Mr. Oakley Coles, at the annual meeting of the British Dental Association held at Cambridge in 1885, mentioned that he had at a previous meeting of the Odontological Society of Great Britain exhibited a specimen of round-celled sarcoma attached to a molar tooth, the microscopic examination of which had been made by Dr. Klein. As a result of the study of my morbid anatomy specimens, of which I possess more than half a dozen, I have been induced to place on record my observations on this particular and somewhat rare affection.

To those unfamiliar with the microscopical appearances of the peridental membrane a brief description of its histology is needful for a larger comprehension of the patho-histology of the disease. The alveolo-dental periosteum is a thin layer of connective tissue which surrounds the roots of teeth and occupies a position between them and their osseous sockets. It consists of bundles of large white connective-tissue fibres arranged chiefly in a transverse direction, and is, in fact, "much like any ordinary fibrous membrane,"* being freely supplied with bloodvessels and nerves. The cellular elements vary considerably, and include cementoblasts, osteoblasts, osteoclasts, and fibroblasts, together with cells and tissues of an "indifferent" nature.† In addition, there are occasionally found cementoclasts, calcospherite spherules, and the so-called "lymphatic spaces" described by Dr. G. V. Black. Of all these the fibrous tissues and fibroblasts predominate.

The chief points of interest in connection with these peridental tumours are that they are found in connexion with the roots of sound teeth, and that their characteristics are those of round-celled (alveolar) sarcomata.

(1) *Seats of occurrence.*—The growth is confined, as its *locus principii*, to the periosteum of the molar teeth, the maxillary being much oftener affected than the mandibular series. It is generally seen to rise from a point situated at the junction of the roots with the body of the tooth (fig. 1); but it may have its origin from the sides of one or even two roots (fig. 2). Later, it generally fills up the whole of the inter-radicular region of the tooth (fig. 3).

* Tomes, "Dental Anatomy," p. 93. 1894.

† Black, "A Study of the Histology of the Periosteum and Peridental Membrane," p. 72. 1887.



(2) *Macroscopical appearances.*—The tumours vary in size from that of a split pea to a small nut, and have a smooth, convoluted, rarely ragged surface. They are firm to the touch and are of a deep-red colour. The teeth themselves are non-carious, and exhibit in their hard parts no traces of disease except slight attrition of their cusps and (in some case) absorption of the apices of the roots. They are markedly loose, and signs of chronic inflammation of the periosteum, accompanied by an accumulation of tartar, are often noticed.

(3) The *etiology* of the disease is obscure ; but there seems to be a predisposition on the part of the growths to attack the fibrous membranes of the teeth of females about the period of the menopause. Long continued and powerful friction, as shown by the wearing down of the cusps, is probably the exciting cause.

(4) The *subjective symptoms* points chiefly to long-continued sharp pain, increased on pressure, the course of the disease lasting sometimes several months. The pain is excruciating at times, and such as to render necessary immediate extraction of the loosened organ.

(5) *Objective Symptoms.*—On examining the mouth, at first there is sometimes almost entire absence of swelling or of any usual inflammatory signs, and the tissues are not markedly indurated. There may be slight suppuration. If the disease is not far advanced diagnosis is only complete after removal of the tooth. Later, well-marked symptoms of malignancy appear.

(6) *Microscopical appearances.*—The growths consist of masses of cells held together by a fine network of fibrous tissue which is very dense here or very loose there, and is in some places apparently undergoing fibrification or chondrification. In the centre of the growth this network is scanty, but the intercellular tissue is conspicuous outside. Vessels are scanty in the centre and have extremely thin walls ; they ramify among the cells. In the outer portion they are larger (but not dilated) and have normal walls. The cells themselves are for the most part rounded in shape and considerably larger than red blood-corpuscles (fig. 4). They contain one or more nuclei and are devoid of any definite cell wall. Great numbers of spindle cells exist. There is little hæmorrhage into the tissues, probably because of the small size of the growth, and because it has not advanced sufficiently to allow of large hæmorrhages to take place in its substance ; but small extravasations of blood corpuscles are noticed here and there. Microscopically the growth is practically indistinguishable from granulation tissue, as has been pointed out by Mr. Knyvett Gordon ; considered from a clinical aspect, however, there can be no doubt as to its malignant nature, as fig. 3 shows. The jaw was excised for malignant disease of the antrum by Mr. W. J. Pilcher of Boston, to whom I am indebted for the specimen. The photograph exhibits the first right maxillary molar *in situ*, with its peridental membrane greatly enlarged by the new growth. Infiltration of the surrounding parts has taken place, the gum, antral mucous membrane, and alveolar process being alike affected, and the latter partially absorbed. There is also absorption of the apical regions of both the labial roots. The patho-histology of this growth is identical with that of the isolated cases already mentioned, and from the evidence at hand it seems to be clear that the latter are only earlier stages of the former.

To sum up, it may be said that sarcomatous disease of the periodontal membrane is not rare in its earlier forms, but that it is very seldom met with in an advanced condition ; and that removal of the molar tooth fortunately cuts short its career if taken sufficiently early, but if it is allowed to continue it constitutes another starting place for malignant disease of the maxillæ.—*Lancet*.

MISCELLANEA.

ANÆSTHETISTS AND UNQUALIFIED PRACTITIONERS. — We cull the following from the columns of the *British Medical Journal* :—

J. F. R. writes: Is it unprofessional conduct for a registered medical man to give gas or any other anæsthetic at the house of dental establishments which are not recognised by any registering body in the United Kingdom ?

The question raised by our correspondent is a delicate one, and an expression of a "pious opinion" by the General Medical Council would be valuable, and would probably be adopted by all anæsthetists as a guide to their actions. Our own opinion is that medical men should not administer anæsthetics for unregistered practitioners, whether medical or dental, nor for registered dentists who are guilty of the unprofessional conduct of advertising, and certainly not for "the institutions" that are found throughout the country, but to which no practitioner's name is attached, and evade the provisions of the Dentists Act. Anæsthetists might with advantage refuse (even at a patient's request) to administer anæsthetics for unprofessional practitioners. It is difficult for patients to understand that there is any difference between registered and unregistered if the same anæsthetist is found at both. In London those gentlemen who are known to administer for illegitimate are usually ostracised by the legitimate practitioner.

A QUESTION OF ETHICS.—The following letter referring to consultations between dental practitioners holding and not holding dental diplomas is taken from the *Lancet* for July 27.

To the Editors of the Lancet.

SIRS,—It will remove a considerable amount of doubt in the minds of many dental surgeons if you will be good enough to express an opinion upon the following.

A somewhat unusual case having been brought under A.'s notice, he requested that he might have a consultation, explaining at the time that he would be glad to meet any properly qualified practitioner. The name suggested was that of a dentist holding a *sine curriculo* licence, and A. declined the consultation, another name being substituted, which gave mutual satisfaction. A. holds that no surgeon or medical man would entertain for a moment the idea of meeting a diplomate or licentiate holding his licence under such circumstances (were that possible), and considers that dental surgeons should regard the matter from a similar standpoint. Is A. right?

Yours faithfully,

July 15, 1895.

PERPLEXED.

Providing that the dentist holding the *sine curriculo* licence carried on his practice in a professional manner, we do not think that A. should have declined the consultation.—ED. L.

GUAIACOL AS A LOCAL ANÆSTHETIC.—The value of guaiacol as a local anæsthetic has recently been brought under notice by Dr. Lucas-Championnière, in a paper read before the Academy of Medicine of Paris. The anæsthetic properties of guaiacol seem to have been first noticed by André, a pharmacist of Paris. The guaiacol was used in solution in olive oil, in the proportion of 1 in 10 and 1 in 20, a syringeful of the former strength containing 10, and of the latter 5 centigrammes of guaiacol. The injections were first tried for the extraction of teeth, and with the result that perfect analgesia was produced, while the sensation of contact and movement was left. Dr. Lucas-Championnière himself tried the method, principally for other minor operations, with equally successful results. From the account given guaiacol would appear to be as powerful as cocaine and is not followed by any unpleasant effects. The full effect does not manifest itself until five minutes after the injection, and in most cases it seems best to allow seven or eight to lapse before operating.

SOLUTION OF IODINE IN CASSIA OIL.—Dr. Ames, of Chicago, finds that a combination of 2 grains of iodine and 60 grains

of cassia oil gives a syrupy liquid which is superior to any other antiseptic dressing which he has tried; its syrupy consistence renders it easy of application to pulp canals, and it can be used with confidence in cases where the dressing has to be sealed up. On keeping for a time, the solution will become quite hard, and when softened by immersion in hot water, it can be used as a temporary setting for crowns instead of cement or gutta-percha; the soft mass becoming hard again on cooling. If a crown fits the root accurately it is held most satisfactorily with this antiseptic glue. If it should be desired to obviate the hardening this can be effected by adding 1 or 2 per cent. of terebene to the mixture. By adding more terebene a larger proportion of iodine can be also added, and, therefore, a more potent liquid of the same syrupy consistence obtained. For this the following proportions are suggested:—Pure oil of cassia, 12 parts; terebene, 1 part; iodine, 1 part. It is essential that the cassia oil should be pure; the oil of Ceylon cinnamon is not satisfactory for this purpose.

NICKEL PLATING.—For nickeling small articles the following solution is recommended by the *Pharmaceutical Journal*. "Nickel and ammonium double sulphate, 7 kilos.; sodium bicarbonate, 800 Gm.; water, 100 litres. Add bicarbonate to the warm nickel solution, and work the bath up to near boiling point. Four cells of a 3 gallon Bunsen battery are required for a 100 gallon bath, but only two should be connected with the conducting rods until the bath is half full of work. Then connect the others by uniting them for intensity. It is particularly necessary that articles to be nickel-plated should be chemically clean. Nickel anodes must of course be used."

WEIGHTS AND MEASURES.—The following, taken from the *American Therapeutist* rules for the conversion of ordinary weights and measures into metric weights and measures, will no doubt be found useful in practice and in the reading of medical and pharmaceutical works or papers. Weight equivalents: To convert grains into grammes, multiply by 0.065; to convert grammes into grains, multiply by 15.5; to

convert drachms into grammes, multiply by 3·9; to convert ounces (avoir.) into grammes, multiply by 28·4; to convert pounds (avoir.) into grammes, multiply by 453·6. Measure equivalents: To convert cubic centimetres into grains, multiply by 15·5; to convert cubic centimetres into drachms, multiply by 0·26; to convert cubic centimetres into ounces (avoir.) multiply by 0·036; to convert pints into cubic centimetres, multiply by 473; to convert litres into ounces (avoir.), multiply by 35·3; to convert gallons into litres, multiply by 3·8.

AN ARTIFICIAL RUBBER.—From *Invention* we learn that an artificial rubber of more or less strength may be obtained by dissolving four parts of nitro-cellulose in seven parts of bromo-nitro-toluol. Upon varying the proportion of the nitro-cellulose there may be obtained a material possessing elastic properties and much resembling india-rubber, and even gutta-percha. Nitro-cumol and its homologues may, if desired, be used instead of bromo-nitro-toluol.

ANOTHER substitute for india-rubber has also lately been discovered by E. Desprez, of Paris. Gutta-percha, in the form of sheet, is taken and covered on one or both sides with a close-meshed fabric—even wire gauze will serve for some purposes—and the whole is agglomerated by pressure under heat. Sawdust, zincdust and other suitable and cheap materials may be incorporated with the gutta-percha.

GUM ACACIA IN USE WITH PLASTER.—The addition of gum acacia to plaster when used either for casting models or taking impressions, is advocated by Mr. E. Lloyd-Williams. When the plaster is used for the purpose of obtaining an impression, he adds one ounce of mucilago acacia (B.P.) to a pint of alum solution; when, however, the plaster is used for casting models slightly less is required. The addition of the gum acacia is said to render the plaster less pliable and more dense, and gives it at the same time a silky look.

THE SIZE OF A CHEMICAL ATOM.—Recent calculations of Sir William Thompson go to show that the average size of a chemical atom is not less than six and not greater than sixty billionths of a cubic inch, and that in a cubic inch of air there

are 300 quintillions of atoms. Hence the cubic inch of air is by no means full, and it is possible for them to move 18 miles a minute and collide against each other, as it is estimated they actually do, 8,500,000 times a second.

TO DEODORIZE IODOFORM, CREOSOTE AND GUAIACOL.—Attention is called by a German dermatological journal to the fact that the odour of iodoform, creosote or guaiacol upon the hands can be overcome by washing with linseed-meal. Articles having an odour of iodoform may be washed in tar-water, to which oil of winter-green has been added. The odour of iodoform or guaiacol in rooms can be dissipated by burning coffee.

BOOKS RECEIVED.

The Dental Record, The International Dental Journal, The Dominion Dental Journal, The Pennsylvania School Journal, The Guy's Hospital Gazette, The Birmingham Medical Review, L'Odontologie et la Revue Internationale d'Odontologie, The Medical Press and Circular, The Dental Cosmos, The Medical Review, The Pharmaceutical Journal, The Chemist and Druggist, The British Journal of Dental Science, The Ohio Dental Journal, The Calendar of the London Hospital and Medical College, The Dental Review, Annual Report General Hospital Launceston, Items of Interest, Medical Reprints, Transactions of the Odontological Society of Great Britain, Deutsche Monatsschrift für Zahnheilkunde, La Odontologia, The Dental Digest, The Dental Review, Le Progres Dentaire, Revue Odontologique.

Letters and other Communications received from:—

J. R. Brownlie ; J. H. Edward ; Burroughs, Wellcome and Co. ; J. Butterworth ; W. F. Gairdner.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 10.	OCTOBER 15, 1895.	VOL. XVI.
---------	-------------------	-----------

The Annual Reports.

THE September issue of this journal is possibly the most read of all the twelve—that is to say, when the annual meeting has been held in August. For one reason or another, it usually contains a good deal of personal interest for a large number of our members. Some have made speeches and said good things, and turn over the pages eagerly to see them in print—sometimes to find that they do not look quite so satisfactory; there is a cold matter-of-factness about a printed report, or perhaps the sub-editor has been sub-editing. Then there is the list of those present, and here and there the mention of a few distinguished guests (how is it that one always finds Smith, Jones, and Robinson quite undistinguished persons really in these lists and never oneself? Editors are very indiscriminating). Then, again, those delightful festivities, the jokes on the way home and afterwards, dealt with in

a few meagre lines, with the names of a few people; and this is all there is to show, and perhaps the one place where our name appears it is wrongly spelt. There is much that is disappointing in our after-meeting journal, especially for those who look to see themselves and their doings therein; but there are two items in its long list of contents that are of great and serious interest to those members who think more of the Association and its success as a whole than of the figure which they themselves may cut as individuals. The state of our purse and the record of what we have done with our money, as embodied in the treasurer's and secretary's annual reports, are the two most important matters to our Association as a whole that are ever to be perused in print in the course of the year; it will certainly not be a waste of time to consider them for a page or so.

The purse-bearer had to report some gratifying economies—£66 saved on the annual meeting, nearly £100 on stationery and printing, £16 on reporting, and £109 on the journal account—close upon £300 in all! Our deposit account is doubled, and we have £307 13s. owing to us in unpaid subscriptions—an item which we hope to see speedily reduced.

While congratulating ourselves and Mr. Betts for this happy state of affairs, we must not forget that our financial prosperity is, in a way, a legacy from our late treasurer Mr. Woodruff, whose business capabilities and careful prudence have largely contributed to produce this happy result.

The budget is therefore a very satisfactory one, and the sinews of war are plainly not lacking. We must turn to the secretary's report to see how the war itself has been carried on; and here, too, we find ample matter for inward satisfaction from the perusal. Mr. Paterson, like other

secretaries—like everyone, in fact, who has found himself concerned in the management of a like undertaking—is constantly urging patience upon those who would see the dental branch achieve in a moment that which took the medical profession, as a whole, so many years. A few years' service in the executive of any body concerned in a struggle for self-advancement soon demonstrates the fearful loss of time that results from haste, and the overwhelming importance of seeing that one foot is firmly planted before moving the other. The outcry for more speed uttered by those who have not the public spirit to join us is naturally and justly put aside by our secretary, but there exists another class who are sometimes impatient—members of our Association as eager for its welfare as anyone ; and to these we would say, in all sympathy, that it is only when you have realised the cost in time and money of a mistake that you learn the value of judicious caution and delay. So far we have made no mistakes, and the result is that each year finds us assured where once we were doubtful ; obscurities are being cleared up, and our powers more and more defined. In the long and triumphant series of cases quoted by the secretary, the full significance of the words, "any name, title, addition, or description implying that he is registered under this Act" (section 3), is made much clearer, and many doubtful points firmly established by decisions in courts of law. The use of the words, "dentorium," "dental surgery," even where no name is used directly in connection with the words ; the word "dentist" on circulars and on a door-mat and on a visiting card, by unregistered persons ; and even the word "surgery," without the prefix "dental," have all been shown to be illegal.

Six cases have been settled without prosecution—a fact which speaks volumes for the wholesome effect of recent interpretations of our Act.

Besides the strictly legal business of the year, our secretary had to report us that good work was being done in the direction of the suppression of covering; that the question of direct representation on the General Medical Council was in a fair way of becoming a fact; and that our representations have had their effect with the Irish College in inducing that body to reinstate the requirement of the three years' apprenticeship in their curriculum.

A more satisfactory list of good solid work done thoroughly has seldom fallen to the lot of a secretary to report, and we think the Association will not grudge their word of thanks to the Executive that has so materially advanced its interest and guarded its purse.

ASSOCIATION INTELLIGENCE.

Western Counties Branch.

A COUNCIL Meeting of the above Branch will be held at "The Swan" Hotel, Wells, on Saturday, October 19, 1895, at 3.30 p.m.

At the termination of the Council business, an informal meeting of members will be held. Members intending to be present are requested to inform the Secretary.

T. ARTHUR GOARD, *Hon. Sec.*

6, *Southernhay, Exeter.*

Midland Counties Branch.

THE autumnal meeting of the members of the Midland Branch will be held in the Council Chamber, Town Hall, Preston, on Saturday, October 26, 1895, to commence at six o'clock, when a discussion will be opened by Mr. G. G. Campion on the papers read at the Annual Meeting held at Hull in June last, viz. :—"What the British Dental Association has done for the Dental Profession," by I. Renshaw, L.D.S.I.; "What the British Dental Association ought to do for the Dental Profession," by T. Gaddes, M.D.U.S.A., L.D.S.Eng. and Edin.; "How the British Dental Association can help the Public to Better Dental Service," by T. E. Constant, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.

Casual Communications and Demonstrations.

The Council will meet at the Bull and Royal Hotel, at 3 p.m.

The members will take tea together at the Bull and Royal Hotel, Fishergate, Preston, at 5 p.m. (2s. 6d. each). Members are requested to notify their intention to attend at an early date to the Hon. Secretary.

Members from a distance desirous of spending the week end at Blackpool, twenty miles away, will be able to get convenient trains after the meeting.

I. RENSHAW, *Hon. Sec.*

Drake Street, Rochdale.

Southern Counties Branch.

THE next meeting of this Branch will be held at the "Roebuck Hotel," Richmond, on Saturday, October 26.

1.15 p.m.—Mr. Richards kindly invites the President and Council to lunch with him at Onslow House, Richmond.

2.30 p.m.—Council Meeting.

3 p.m.—General Meeting.

Mr. Richards, in a short paper, will start a discussion on "Pyorrhœa Alveolaris;" Mr. Rymer will in a short paper introduce the subject of "Rhizodontophy." Casual Communications.

5.30 p.m.—Dinner (tickets 4s. 6d. each).

N.B.—"The Roebuck" is situated on The Terrace, Richmond Hill, and is about a quarter of an hour's walk from the station. Application for dinner tickets should be made to the Hon. Sec. before October 21.

FRANK V. RICHARDSON,
Hon. Sec.

1, Sillwood Road, Brighton.

Metropolitan Branch.

THE next meeting will be held on Tuesday, the 29th inst. The usual notice will be sent to members.

SIDNEY SPOKES,
Hon. Sec.

THE GENERAL HOSPITAL, LAUNCESTON, TASMANIA.—The report of this hospital for 1894, shows that the study and practice of dental surgery continues to make rapid strides in this colony. The dental department in connection with the hospital is under the care of Messrs. A. L. Wells and A. J. Hall, and during the year over 1,000 cases were under treatment, and a glance through the detailed report shows that a very fair proportion of the operations undertaken were conservative in nature.

ORIGINAL COMMUNICATIONS.

Notes upon the Chemistry of Dentine.

By CHARLES S. TOMES, M.A., F.R.S.

The Salts of Dentine.—In a previous communication I mentioned that I had found that the percentage of lime salts in the molar teeth was somewhat higher than in the incisors and canines. In order to thoroughly test the correctness of this inference, four upper and one lower entire sets of teeth (with the exception of two or three teeth that were carious) have been examined, making in all seventy-five teeth, and this difference has been found to exist in every instance. The fact may, therefore, be held to be fairly established, and the average, taking together all the incisors and all the molars examined, is:—

*Incisors.—71·2 per cent. inorganic salts.

28·8 per cent. organic matter and water.

Molars.—73 per cent. inorganic salts.

27 per cent. organic matter and combined water.

In the case of three of the sets of teeth the dentine turnings of corresponding teeth of the two sides had been placed together, but in the other two sets each individual tooth has been examined, with the view of seeing whether Dr. Black is right in supposing that differences in chemical composition between teeth from the two sides of the mouth occur. It is difficult to prove a negative, but my experiments lend no support to this idea; teeth from opposite sides of the same mouth giving results very closely in accord, with the exception of a single pair, between which the discrepancy was so large as to strongly suggest experimental error.

Taking all teeth examined the percentage of salts is 71·9.

I am inclined, however, to think that Dr. Black is right in thinking that the percentage of lime salts is not the factor which determines the liability to caries, for in one set of teeth in which the wisdom teeth were barely in place, two bicuspid had been largely affected, there was incipient caries between

* Dr. Black's figures reduced to percentage of *dry* dentine I find give 71·7 for incisors and 72·3 for molars.

many of the teeth, one wisdom tooth was badly decayed and the incisors were markedly striated transversely. Yet this set of teeth gave an average of 71·4 per cent. of salts, whilst another much worn dentition, quite free from any trace of caries, also gave 71·4 per cent. of salts; that is to say, both were ·5 below the general average.

Chemists make use of two methods of ascertaining the percentage of salts, both based upon the destruction of the organic constituents, and the comparison of the results of those two methods throws a light upon the chemical constitution of dentine. The most common method is to burn the dentine in a crucible; the other is to treat it with strong nitric acid and moderate heat till bubbles are no longer evolved, and then to evaporate to dryness, but not to heat to anything near redness. In order to get the best comparative results the dentine in the form of turnings, cut with a spear head drill, is dried for six hours in a constant temperature oven, and the crucibles containing the dentine are incinerated in a muffle, all at the same time so as to secure perfect uniformity; the muffle has slits in it, and air is allowed to enter by not sealing up the door of the muffle tightly. In this way every tooth has received absolute uniformity of treatment. This method gives 71·9 as the average percentage of lime salts over the whole number of teeth examined. The nitric acid method leaves a perfectly white residue, but gives a higher percentage of salts, namely, 76·8 per cent. But if these crucibles be subsequently ignited in a muffle they again lose further weight, and the percentage of salts comes down to precisely the same as that given by the other method.

This further loss by ignition, seeing that the organic matter, as determined by tests for proteids, was wholly destroyed by the nitric acid, can only be of water in combination, that is to say, water which cannot be driven out at a temperature of 212°. And this inference is confirmed by the converse method of dissolving out the lime salts and weighing the dried organic matter. By this latter process it is found that the organic matrix dried, and the lime salts separately dried and ignited, fall short by from 7 to 8 per cent. of the total weight of the dried dentine.

It is well known that tribasic calcium phosphate prepared by any wet process retains one or more molecules of water in

chemical combination, which is not lost below a temperature of 400° , and is only certainly completely expelled at red heat.

It seems, therefore, pretty certain that the calcium phosphate in dentine has water in combination with it.

The late Prof. Hoppe Seyler believed that the lime salt in bone and enamel, and perhaps also in dentine, was a combination of calcium phosphate and calcium carbonate in equivalent proportions, somewhat analogous to the mineral apatite.

Apatite has the formula $\text{Ca}_{10}\text{F}_2(\text{PO}_4)_6$, and in some varieties of the mineral chlorine takes the place of the fluorine thus— $\text{Ca}_{10}\text{Cl}_2(\text{PO}_4)_6$.

Hoppe Seyler believed that the bone salt contained the radicle CO_3 , instead of the chlorine, so that it would be $\text{Ca}_{10}\text{CO}_3(\text{PO}_4)_6$, or $3\text{Ca}_3\text{P}_2\text{O}_7\text{CaCO}_3$; that is to say, three molecules of tribasic calcium phosphate and one molecule of calcium carbonate.

If this idea be true, the percentage of calcium carbonate in the ash should be 10.6. But, although I speak with reserve, because the analysis of small quantities of ash for carbonic acid is subject to some degree of error, my analyses do not give much more than half this amount of calcium carbonate.

The Organic Matrix of Dentine.—If the salts be dissolved from dentine turnings, or even from a block of dentine, by means of dilute nitric acid, it is possible by care to remove them (practically) without bringing into solution any weighable amount of proteid or proteoid substance.

The organic residue when dry is brownish yellow, horny, and translucent; its weight is, as before mentioned, $\frac{1}{2}$ of the loss experienced by dentine on ignition. And as this resultant Collagen is by chemists universally supposed to be the anhydride of Gelatine, it is almost certain that the combined water in dentine is combined with the lime salt, not with the organic matrix.

By prolonged boiling of Collagen derived from ivory in water acidulated with acetic acid it is dissolved, a shreddy, slimy looking residue being left behind. Microscopic examination shows this residue to consist wholly of Neumann's sheath, and these weighed after drying are found to constitute 3.1 per cent. of the Collagen mass, or 1.2 per cent. of the original dry dentine, an amount much larger than I should have

expected. In their behaviour with reagents they correspond exactly with Elastin.

Roughly speaking, the average elephant ivory is composed of:—

Inorganic salts	...	...	...	58
Combined water	...	...	...	7.7
Collagen	...	...	...	33.1
Elastin	...	...	...	1.2

However carefully prepared, both the Collagen and the Elastin retain just a trace of lime salts, but hardly a weighable quantity. As a mere suggestion, I would say that the difference between teeth of good or bad quality may possibly lie in the amount of combined water, in the proportion of calcium carbonate, in the nature of the organic matrix, in the proportion of Elastin to Collagen, or, finally, it may not lie in the dentine at all, but may be a difference in the enamel. But I am inclined to concur with Dr. Black, that it does not lie in the mere proportion of lime salts.

Science and Dental Surgery.*

By J. HUMPHREYS, L.D.S.I., F.L.S.

GENTLEMEN,—In a specialty like dentistry so many aspects of the profession have been touched upon in the various inaugural addresses which have been presented to this and other branches of the British Dental Association, that it is no easy matter to discuss anything absolutely new.

I have, therefore, determined to confine my remarks, which I promise you shall be very brief, to the immense benefits conferred upon our art by science. Those of us who can look back to the dentistry of twenty-five years ago, can acknowledge the aids conferred from such a source.

Carious teeth, especially those with pulp exposures were invariably extracted, because with the limited knowledge of those days it was not possible to save them.

It is only within the last quarter of a century that the

* Being a Presidential Address read at the Annual Meeting of the Central Counties Branch, held at Birmingham, July 20, 1895.

microbian origin of caries has been demonstrated, and the antiseptic treatment of pulps has been practised. Before that time dentists were groping in the dark for the cause of tooth decay, as may be clearly seen in the literature of the period. Now we are treading upon comparatively safe ground; we know the reason and cure for dental caries, thanks to the investigations of Lister, Miller, Mummery, Tomes, and other scientific investigators.

By the aid of the microscope we can trace the form and growth of the various dental bacilli; we understand the pabulum necessary to their development, and we can grow them out of the mouth as easily as we can grow a crop of mushrooms. We can trace their action upon the dentinal tubes, and the putrefactive action upon the pulp, and knowing these facts, we can combat their ravages by the various antiseptic drugs which science has placed in our hands, many of them unknown to the past generation.

Dr. Miller has determined their various properties in a very remarkable manner; and there are few teeth which cannot now be saved by proper treatment. We can hardly realise how helpless a past generation must have been in attempting to treat abscessed teeth, until the invention of the root syringe, and the merits of peroxide of hydrogen were demonstrated.

It is too often the practice to ignore or forget the benefits of scientific teaching; but without a knowledge of the character of odontoblasts and osteoblasts we should be unable to properly understand the nature and treatment of exostosis, and calcification of the pulp.

By means of the microtome and microscope we can trace the development of the human tooth in the foetal state, from the first inflection of the fold of oval epithelium, to the fully-developed tooth, watching the successive stages with the greatest accuracy; and we are enabled thereby to recognise their close relationship to the lower mammalia, and in the jaw proper by the centres of ossification, to the reptilia.

The comparative study of teeth offers an endless range for speculation and research, when we recognise the enormous development and specialisation which has converted dermal spines, into the complicated mechanism of the poison fang of the rattle-snake, and the molar tooth of the horse.

We are enabled thereby to penetrate into the geological

past, and demonstrate the huge batrachians of the Trias, and the various reptiles which inhabited this planet in the age of the great reptiles, and the dawn and advance of the higher mammalian life in the Eocene.

Electric science has also proved herself a willing handmaid. Compare the efficient electric motor with the more ancient dental engine, and bridge over that period to the days of hand instruments; when the chisel, hand bur and excavators were our only tools, and we can recognise how different are the opportunities of the modern dentist to those of the past.

On dull, dark, winter days our eyes and head no longer ache from the glare and heat of gas reflection; we have the pure and elegant electric light always at command. We have almost discarded our hand mallet and substituted the electric mallet, thereby enabling us to dispense with the services of an assistant.

The scientist who, in trying to manufacture diamonds from the melting of carbon by electricity, and instead discovered the green crystals of carborundum has conferred an immense boon upon our art. We all know the comparative ease with which the densest enamel is cut through by the aid of carborundum, thereby enabling us to perform the operation of crowning in so much less time and with less discomfort to our patients than formerly. In the department of anæsthetics, nitrous oxide gas, chloride of ethyl, and cocaine have all been added comparatively recently to our aids for tooth extraction, while chloroform itself was discovered within the memory of some of our older practitioners, and it may be of interest to know that one of our members, Mr. Adams Parker, was the first person in this city to take chloroform after its discovery by Sir James Simpson, it being administered to him by his father, the late Dr. Parker.

Well, gentlemen, the chemist, the pathologist, the microscopist, the mechanical and electrical engineer, have furnished us with such aids to the successful prosecution of our art, that it behoves us to demonstrate that we can do better work and overcome difficulties of which our forefathers had no conception. With their limited knowledge and their want of scientific and manipulative training, many accomplished most wonderful results, and there is just this danger with us and our present favoured surroundings, that we may lack the

thoroughness and earnestness which characterised their work. Our opportunities are greater, our environment is immensely superior ; let our work not suffer by comparison.

The Advisability of Bridge-work.*

BY GEORGE THOMSON, L.D.S.ENG.

IN every department of our science efforts have been made to improve upon existing practices. Since skill and inventive genius has so far perfected artificial teeth as to colour, quality and form, methods of attaching them have been sought for which will not only enable the wearer to disguise their presence from others, but as nearly as possible become unconscious of them. Not many of our patients are in the position of the boastful old gentleman in the railway carriage who said: "O'im siventy years of age, and every wan of my teeth as good as the day I was born!"

Some sanguine operators have thought that in bridgework would be realised the ideal of their wishes. Richardson speaks of it as a new field for the usefulness of our profession, which will bring joy to the heart of every conscientious dentist. On the other side, experienced and skilful men have all along viewed the adoption of the method with distrust. It shall be my endeavour to state the case as fairly as I can for both sides, and also give my own opinion for what it is worth, asking your kind indulgence for the somewhat disconnected manner of my paper.

It is difficult to treat of this subject in a general way, as it is only in the consideration of individual cases that definite methods may be approved or condemned. For this purpose I shall use as illustrations cases I have dealt with myself, hoping my experience may be profitable to you.

The term bridge-work is correctly applied to a structure which is suspended in a straight line from one or more teeth or roots to others. It is incorrectly applied when referring to structures which are carried round the mouth anchored to

* Read at the Annual Meeting of the Western Counties Branch, held at Barnstaple, August 2, 1895.

some teeth, clasped to other teeth, and partly resting on roots or gum.

It should be remembered that technically a bridge is an arch or series of arches, resting at either end on *terra firma* practically, and that dental bridges in no way accurately represent this condition of things. The best and strongest teeth do not make an immovable support or abutment for the bridge. Not only has a tooth lateral movement in every direction, but it also rises and sinks in its socket. No bridge could be made to withstand that sort of thing.

How far our dental engineers have succeeded in overcoming these difficulties is within the scope of my paper.

I pass around an example of what is often done in the name of bridge-work. Most of you will have probably seen similar cases. The molar teeth were crowned and used as abutments, the bridge passing round the canines to the opposite molar tooth. The canines were used as rests, but were protruded by the pressure; the decaying roots on either side were allowed to remain, and the case partly rested on these. The patient had worn the case for about twelve months when she came to me complaining of persistent neuralgia; there were also chronic abscesses connected with the roots under the plate. The patient objected to its removal until two years after, when her health was completely broken down by the constant pain. Her mouth was foul from the continual discharges and filthy condition of the plate, and large excrescences of gum were covering the artificial teeth.

Another of these semicircular cases I saw lately which was dependent from four superior bicuspid. These teeth became so painful in a few months that the appliance had to be removed.

Mr. Tait, at a meeting of the Southern Counties Branch of the British Dental Association, speaks of a similar case for which "the patient had been charged 200 guineas, which was a dismal failure."

I have seen many smaller cases of the same kind, such as one anchored at one end to a good bicuspid root, and at the other end to a short-rooted, weakly implanted wisdom tooth; others anchored to roots partly absorbed and abscessed. I have it on the authority of a late President of the Odontological Society that the average length of time that these

cases are tolerated in the mouth is from one and a-half to two and a-half years.

But I should insult the intelligence of such an assembly as is now before me to continue the enumeration of these cases, which we must all condemn as bringing discredit on ourselves as an honourable profession, and as being a wasted expense on the part of the patient.

As for many of the smaller bridges, the patient would be far better off both in the present and during life with the gaps unfilled. I am strongly convinced the loss of several teeth in most mouths is more an advantage than otherwise. In the course of years the teeth rearrange themselves and fairly good occlusion is obtained. To put in artificial teeth or bridges in young people, and prevent this rearrangement, is not a good practice. Teeth that are more or less isolated, or considerably separated, are more easily kept clean by the action of the tongue and lips, and the sides are washed by the saliva, so that the fermentation, which is the cause of decay, is not so likely to take place. I may be digressing here, but there is no doubt that the ease with which small bridges can be made and large fees obtained for them has encouraged many—it may be for want of thought—to do a great deal of permanent harm.

Personally, I would rather have four molars in antagonism and my own incisors than any set of artificial grinders I have ever seen. It is the preservation of the function of mastication we aim at, and not for a few years only, but it may be for thirty, fifty, or even a century in exceptional cases.

If there is a choice of treatment, and we can preserve enough teeth to carry one through life in moderate comfort, why attempt elaborate methods, which are at the best uncertain? Dr. Parmley Brown recently referred to a case of bridge-work he had seen after sixteen years and still doing good service; but if this fails, bringing with it the loss of all the anchorage teeth, and the patient has another twenty or thirty years to live, where is the advantage? I know a lady of 73, whose grinders are few, who is indebted to the late Mr. Sheffield, of Exeter, for conservative work done more than fifty years ago, who with my advice, retains in perfect health and utility the few molars remaining, which would, I am sure, be quickly destroyed if clasped or banded for a denture. Another one of

94 years, in the same way is spared the trouble and annoyance of plates, &c., and will probably attain her century, and still be able to eat in comfort.

Having so far considered the use of small bridges, I would now ask how much better is bridge-work generally an improvement on gold, vulcanite, or continuous gum work?

I have here not a very good model of the upper jaw of a girl of 19. It is one of those cases where a bridge seems to be the ideal treatment; and it was my original intention to so treat the case. Every tooth seemed to be hopelessly carious; there was not one with a crown remaining. I extracted all I deemed unworthy of salvation, which left in good condition two particularly strong canine roots, two good first molar roots, and one central incisor. Waiting for the absorption of the alveolus I made a temporary plate, crowned the molars, and fixed temporary Logan crowns upon the canines and central. When I inserted the whole the effect was horrible; the fact was then revealed that, owing to the early decay of the molars, the bite had closed down, and the canines had been gradually protruded out of position. I reconsidered the case and added canines to the plate.

Eventually I made a gold case, with gum sections to fill in where absorption of the alveolus had taken place, and strong, broad bands around the capped molars.

The advantages of this method appear to me as follows, viz.:—

(1) The teeth which support partly, or rather steady, the case, cannot decay, and the slight daily strain put upon them is relieved by a nightly rest.

(2) The comfort and cleanliness of the appliance.

(3) Its permanency.

(4) The facility with which it can be repaired in case of accident.

(5) Its inexpensiveness.

In favour of a bridge in this case would be the comfort to the patient of being able to laugh, sing, and romp without a thought of her teeth, and the general feeling of confidence one has in a fixed appliance.

The roots, being strongly implanted, would bear a great strain; but, on the other hand, where this is the case, the opposite jaw may be equally strong, and the force corres-

pondingly great. It would be no use making a bridge in this case with flat teeth backed up in the usual way. It would be necessary to tip the teeth with gold, and have the porcelain as thick as possible; as the incisors would be unsightly tipped with gold, they would have to be kept clear of the bite.

Given a thoroughly well-constructed bridge, what would be the probable condition of things in ten or twenty years? How much can we promise our patient, with the experience we have of this work, so far? It is largely a question of mechanical skill *versus* surgical experience.

If a bridge can be constructed which will be removable in such a way that each root will daily have time to recover itself, and have rest from the strain put upon it, or if some method of irrigation, such as Dr. Martin, of Lyons, uses in his prosthetic apparatus for resection of the jaws, could be adopted, many of the objections would be removed.

To quote from Dr. Callahan, of Cincinnati: "The man that will show us how to make the attachments to roots that will not irritate the gums, that will not afford lodgment for food, that will not make a disgusting display of gold, that will not break or twist out of shape, that can be repaired without destroying the whole piece, and can be adjusted without destroying sound teeth—that man will confer a great blessing upon our profession as well as upon thousands of people who carry about in their mouths those unsightly, broken and stinking abortions that are altogether too common in our midst."

The tremendous strain which is brought to bear upon a bridge in the mouth and the lateral movement in grinding is much against bridges which are built into the sides of teeth either with gold or amalgam; in time some part or other or the whole will be displaced. To risk the destruction of one or more good and useful teeth to provide support to a structure so liable to failure from many causes is a serious matter.

The greater certainty with which dead teeth can now be treated and restored owing to our better knowledge of dental surgery is a point in favour of bridge-work.

Each case must be considered on its merits; the dentist must be surgeon, artist and mechanic. He must judge of the health and habits of his patient, the relative value of the teeth

and roots concerned, which roots may be treated and saved, which extracted. The age and often the sex is a consideration. He must preserve as far as possible the characteristic expression of the mouth, by the colour, arrangement and form of the teeth, and have the mechanical skill to fit and adjust the case with nicety and exactness. In fact a high class of skill in every sense is demanded, and he may then judge whether the case will be sufficiently lasting and useful to compensate *him* for the time and thought and labour expended, and the patient for his or her endurance, and time spent in the dentist's chair, and the necessarily high fee.

I should be the last to discourage efforts to improve on our present methods, or to rest satisfied with the old ways, but one is not warranted in risking one's reputation on experimental work. Dr. Fitch, an advocate of bridge-work, says that "The fundamental principle underlying the construction of bridge dentures is that properly placed and conditioned natural teeth or roots are far better fitted to sustain the force brought to bear upon an artificial denture than are contiguous alveolar surfaces." And disagreeing with this principle, I believe that in the greatest number of cases bridge-work is *inadvisable*.

DISCUSSION.

The PRESIDENT said they were all much indebted to Mr. Thomson for his able and well-thought-out paper. It was gratifying to hear that the work lasted so long in some cases, but he had a vivid recollection of seeing a magnificent demonstration given in 1881 by Dr. Finlay Thompson at the British Congress, while he found, on inquiry, that it lasted only twelve months. In that case there was the great sacrifice of a tooth which was not decayed, simply to get an anchorage. The whole of the canine had to be drilled in order to get an anchor, which he did not approve of.

Mr. H. MALLETT said there generally seemed to be a "rage" or fashion in their profession, as in most things. There was a time when the dentist who did not use gold for every filling was not thought much of; then there was gutta-percha, and then celluloid, which he found to be a failure. He had seen many failures in bridge-work. The last example which came before him was really a beautiful piece of work—which cost a lot of money—but the four pieces wanted re-fixing, and he was afraid the whole thing would be a failure. In some cases where it would be likely to prove useful, it was scarcely wanted.

He might say that he now had a piece of bridge-work in his mouth with which he could safely say he could do anything almost as well as with the natural teeth. He had not tried cracking nuts, but if any gentleman liked to examine the specimen he was at liberty to do so. It had been made since he returned from Australia, and it seemed to be a very suitable case. He would not describe what he went through in detail. The enamel was stripped from the wisdom tooth, and ditto canine, which was something which few patients would bear. He bore it purely from the point of view of experimental work. Speaking generally, he did not find anything better, on the whole, than well made vulcanite or gold work, if they could only get patients to be cleanly. Bridge-work might be, in a few cases, very acceptable.

Mr. BROWNE MASON said he had found bridge-work a failure. Crowning he was very fond of. He could recall a case in which a tooth he crowned twenty-eight years ago had not been disturbed since. Anything that stood on its own foundation he approved of, and was pleased to carry out. A lady came to him the other day to replace two loose bridges, and she was excessively annoyed because he would not do it. He said he had a reputation to lose, and that if he replaced them he should be considered a party to putting them in. He described the nature of the case, and said he found the "anchor" teeth very carious. He told the lady that the best thing would be to stop the teeth and then abandon the bridges. What became of the case he did not know; the lady carried them away in her bag; the bridges had been put in eighteen months before, and had been fastened once in the interim. He had seen numberless failures, and those that remained were not satisfactory to his mind, because, generally speaking, the crowns of the replaced molars were so adjusted that they did not come in perfect contact with the opposing teeth, and as molars, they were very inefficient. His remarks did not apply to such work as Mr. Gartrell did—he put in bridges which could be taken out; what he referred to were those which were anchored and made fast. The average length of time which these things lasted was not at all a compensation for what the patient had to go through, and for the general destruction of tissues and healthy teeth which took place to put them in.

Mr. KENDRICK agreed with Mr. Thomson that the small bridge was worse than no bridge at all. They did a vast amount of injury. The great reason of the failure of bridge-work was that it was forgotten that different teeth were placed in the jaw at a different angle. There were the three roots of the molar in the upper jaw implanted in different angles to break concussion; and when they spanned on to the canine, with its roots going in another angle, they had a leverage that was something enormous. If they could get a person whose teeth were placed in at one angle, they could put up as much bridge-work as they liked; but so long as there were roots at different angles

for the purpose of breaking concussion, they would never get bridges to be of much good. Each root should carry its own crown, and they could put as many crowns as they liked in the mouth, and do very well. He was going to put ten or twelve crowns in one mouth, and he believed it would answer well. If he put a bridge in such a case, it would be an utter failure.

Mr. GARTRELL said that as an advocate of bridge-work to a certain extent, in the past, he supposed he must look upon himself as being placed on the defence now. He did not think Mr. Thomson's paper attacked what he had supported; he attacked *fixed* bridge-work, and he agreed with him to a great extent in that. There were few cases in which they could use fixed bridge-work. But if they made them movable, so that each root had its own play, he did not see in what way the point made of roots not being able to move as he described, as they were at liberty to do so. He had had failures in bridge-work, but they were because of his inexperience; they all had to learn; they could not get perfection in a new system all at once, and if they never attempted anything new, where would they be? He began by making bridges for those who knew he was doing experimental work—persons who understood and who were willing to assist him in the matter, patients who would not go away and blame him if he did not succeed. Some of the cases failed, but he had cases at Penzance where the work had been eight years in the mouth, and if they saw these he believed they would say that nothing in the way of plate work could equal them. They were no inconvenience to the patient, who could take them out and clean them; they were perfectly easy to eat and speak with; and they were as comfortable in the mouth as the natural teeth. And they could not get plates to do anything of that sort. Take a second bicuspid root and a canine root—two roots to carry three teeth; they could crown those two roots and attach the bridge tooth between them, and then they had a piece of bridge-work. Moreover, the roots were protected from decay and were put to work again, which meant to them renewed life. Supposing they put a plate, they would have to attach to two natural teeth, which would be likely to be injured by the banding, and decay, there would also be the objection to the plate over the mouth, which some patients thought a great deal of. As to a piece of bridge-work like that, they could make nothing equal to it in plate work. In a great many cases bridges were put in by people who simply wanted a high fee. But there were many cases where bridge-work was useful, and the trend of American opinion was, that bridge-work, to a certain extent, was a success, and had come to stay.

Mr. GENGÉ remarked that he had used bridge-work when teeth could be removed, and he could call to mind several cases where patients had worn them seven or eight years. He had had some failures, and it should be only used where there was sufficient room to put the bar, to allow teeth to be removed and cleaned.

In replying on the discussion, Mr. THOMSON said he was glad to find he had stated what seemed to be the general opinion. Mr. Gartrell was the only one he had anything to reply to, but in what he said as to making bridges movable, and giving the teeth time to recover themselves, he could not have noticed that he mentioned the matter in his paper, and said that if such a bridge were made, he quite agreed with it, and looked upon it as useful. His paper did not altogether condemn bridge-work; he only said that he thought that in the greatest number of cases bridge-work was inadvisable. Then they all knew that work done by Mr. Gartrell would remain permanent and useful, where work done by the average man must inevitably fail for the want of mechanical skill and a general understanding of the principles of the whole thing.

On the Physiological Action of Chloroform and other Anæsthetic Agents.

By J. H. EDWARD, L.D.S., R.C.S.I., &c.

THE introduction of anæsthesia, like that of vaccination, forms an epoch of the science of surgery, and also seems likely to be scarcely less beneficial to mankind. It must be a matter of congratulation to present practitioners of medicine and surgery to live in this, one of the brightest eras that ever dawned upon these sciences, when by means of one of the noblest discoveries that ever conferred immortality upon a man, we are enabled to exchange the groans and cries of the operating table for the calm, sweet slumbers of the reposing infant; when the most severe experiments, which the good of society requires should be undergone by animals, are performed without outraging the best feelings of humanity; when by means of this powerful agent we are enabled to prevent the necessity of some very arduous operations, as well as to relax the muscles sufficiently to reduce the worst forms of dislocation. There is no doubt that future generations will look back to Professor Simpson with a degree of gratitude and admiration not inferior to that felt for the illustrious Jenner. Having made some experiments on the physiological action of anæsthetic agents, which I believe tend to throw some light on this obscure subject, I beg to offer them for the consideration of the profession. I shall, in the first place, proceed to recount the principal methods

which have been adopted for the purpose of annulling pain in operations. In 1784 a person named More proposed to compress the principal branches of the nerve supplying the part to be operated upon. More recently it was proposed to compress the larger vessels of the neck by ligature. In 1828 Dr. Hickman proposed the inhalation of carbonic acid gas, and the watery extract of opium was used ages ago with this view.

Thus, it is very evident that the idea of destroying sensation in operations is by no means modern, although this very desirable effect had never been carried out previously to the time of Professor Simpson. When ether was first used in anæsthesia, its action was generally considered as analogous to that of alcohol, since we know that persons in a state of profound intoxication have been known to suffer the severest accidents and subsequent operations without evincing any sensation. Is this owing to congestion of the brain, caused by its stimulating effects? If so, we can understand that ether, acting in the first instance as a stimulant causing an increased flow of blood to the brain, distending the vessels of that organ, and by this means producing congestion, would annihilate sensation. But it is questionable whether the rapid effect produced can be accounted for in this manner.

Now the question which naturally presents itself to our mind is—what is the peculiarity existing in those substances that distinguishes them so preeminently in the production of anæsthesia? As I believe their power is principally due to their chemical composition, I shall proceed to give that of the principal agents that have been used for this purpose. Chloroform is composed of one atom of hydrogen, one of carbon, and three of chlorine. Chloride of hydro-carbon is composed of four carbon, four hydrogen, and two chlorine atoms. Nitrate of ethyl consists of four carbon, five hydrogen, six oxygen, and one nitrogen atom. The hydrate of oxide of acetylene was expected by Professor Poggial to supersede that of ether or chloroform, and there is no doubt that but for its unpleasant and irritating effects it would be a very powerful agent; it is composed of four atoms of hydrogen, four of carbon, and two oxygen.

The bisulphide of carbon: this liquid is composed of two atoms of sulphur and one of carbon. The unpleasant sensa-

tion experienced during and following its inhalation have prevented its practical use to any great extent. It will be perceived that in each of these substances, carbon exists to a greater or less extent, and in all, in my opinion, it constitutes the active element. I procured two animals, to one of which I administered chloroform; it was speedily anæsthetised. I then exposed the common carotid near its entrance into the cavity of the cranium, made an incision, and found that the blood, instead of presenting the bright arterial hue, was darker than venous blood in its normal condition; this blood was found to contain an excess of carbon, to which its colour was probably due. I then exposed the common carotid in the second *animal*, and by means of a tube and some slight apparatus, connected the two arteries, and found that the moment fresh blood was conveyed to the nervous centre of the animal then inhaling chloroform, that sensibility was re-established, thus clearly demonstrating that it is the blood, and the blood only, which is, in the first instance, affected; and through the alteration in the quality of that portion which supplies the brain, insensibility ensues, and continues so long as the agent is administered, ceasing when oxygen or atmospheric air are again allowed to exert their oxidising influence. I exposed the carotid artery in another animal, made a slight incision, and allowed a gentle flow of blood, which presented the bright arterial hue. I then administered chloroform, and found that gradually, as it continued to flow, it lost this character, and assumed the dark venous colour before described. From the experiment of Messrs. Allan and Pepys, we are lead to conclude that the only change which takes place in the blood by respiration is in the elimination of its carbon, and if this effect be counter-balanced by the inhalation of a liquid containing so large an amount of carbon as chloroform—and in fact, every anæsthetic agent at present known—it must be evident that the respiratory change cannot take place; that black venous blood containing a much larger amount of carbon than in the normal condition, circulates not only in the veins, but also in the arteries, the nervous centre loses its usual stimulus, and complete insensibility ensues. I do not doubt that insensibility may be produced by forcing an animal's head into a bladder containing hydrogen or other irrespirable gas

in which no carbon exists, but the effect is still the same, as it can make little difference whether carbon enters the torrent of the circulation by inhalation, or its elimination from the blood be prevented; a larger amount of carbon than in the normal condition circulates throughout the system, insensibility is the first effect, coma follows, and if continued a sufficient length of time, death concludes the scene.

This view is borne out by the fact that of the few deaths which have occurred during the use of these agents, the *post-mortem* appearances have been such as we should expect to find on suffocation—congestion of the nervous system, the heart gorged with black blood, &c. Some time ago a girl died while inhaling ether, and the surgeon in attendance administered brandy, with the view of reviving the patient. On a *post-mortem* examination the appearances were such as induced the gentlemen present to attribute the fatal effects to the injudicious administration of the brandy producing asphyxia, but if my view with regard to this subject prove correct, the appearances then observed would be almost exactly such as one would expect to find if the inhalation of these substances were continued a sufficient length of time to produce death.

It is alleged by some that chloroform acts through the medium of the nerves, but if a nerve be exposed and a drop of chloroform placed upon it, insensibility of the nerve, or of the part which it supplies, does not ensue. I think there can be very little doubt that its effect is entirely owing to the chemical change—that is, to the excess of carbon in that fluid, either from the inhalation of a fluid containing that element, or by preventing the respiration of the animal, and by this means also preventing its elimination from the system; in either case the insensibility is owing entirely to the excess of carbonaceous matter, which I consider we may therefore term the active principle of anæsthetic agents. Chloroform, when injected into the veins, produces effects differing from those of its inhalation only in degree. This is accounted for on the same principle, for it can be of little importance whether the carbon is taken into the system by inhalation or injection. In like manner we may also account for the insensibility produced by excessive drinking, when sufficient carbonaceous matter is taken into the system, whether from inhalation of

chloroform or the imbibition of alcohol, the effect would be the same, merely differing in the degree of rapidity with which it is produced. The ligature or compression of the larger vessels of the neck, as a means of producing insensibility during surgical operations, mentioned by Hoffman, Valarde and Morgagni, would produce a similar effect, which may also be produced in a partial degree by the topical application of intense cold. I am inclined to believe that the action of these two agents is precisely the same, that when chloroform is placed upon the hand or other portion of the body it evaporates, and thus produces the same effect as compression of the vessels.

Chloroform has been considered to have an effect analogous to that of nitrous oxide, but I am inclined to think that its effect is diametrically contrary, and that the inhalation of that gas would in all human probability be more likely to promote the circulation of arterial blood in the veins than of venous blood in the arteries.

I offer these few observations in the sincere hope that those who are more favourably situated than myself, may institute such experiments as may be likely to elucidate this point. Nor would this be of merely theoretical value, as it would afford us important indications in practice by showing what the aim should be if the inhalation of these agents be carried too far.

A Method of Obtaining a Plaster Model as Good as the Mouth, with a View to Crowning one or more of the Anterior Teeth.*

BY R. P. LENNOX (CAMBRIDGE).

I HAVE at all times been anxious, as I have no doubt everyone, whether practitioner or patient, has been anxious, that the work to be done at the mouth should be reduced to a minimum, and I wish now to explain a method whereby this is, I think, attained in cases where one or more anterior teeth are to be crowned. This point was referred to last year by Dr. Stack at the meeting of the Irish Branch, and I had

* Read at the Annual General Meeting, held at Edinburgh in August, 1895.

some hope that others might have been induced to work at it, and that we might now have had a combination of experiences, which would have finally determined the method it would be best to pursue.

However, I will proceed with the explanation of the steps I have taken in, as I hope, the desired direction. What has

FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

hitherto induced many to work entirely at the mouth in crowning has been the difficulty, if not the impossibility, of getting a definite impression of the root-face by the ordinary means. The distance between the neighbouring teeth at the gum margin being greater than that between them at their cutting edges, there is always a certain amount of dragging which obliterates the impression of the root-face.

This difficulty I am now prepared to meet by a method which, besides furnishing definite impressions of the root-faces, will give in the same impression the height of the neighbouring teeth, natural or artificial, the different directions of any number of root-canals, and as many metal-lined canals in the model, the metal being intended to render the canals incapable of injury in the process of fitting the posts.

To-morrow my partner and I propose to demonstrate this method upon a living but, save for the purpose of crowning, a useless tooth. I will here briefly describe how we shall proceed. We shall first remove the crown by means of a saw, and I should like to take this opportunity of remarking that the excising forceps ought to be regarded in cases of crowning as the key now is in cases of extraction. Having removed the pulp and sealed the apex of the root, we trim the root-face to a convex form by cutting down the edges all round, and open up the canal for the post. At this point we find it most convenient to take the depth of the canal with a post and slide (as shown in fig. 1), which can then be laid aside for after use. We next proceed to take the impression, and I have now to introduce my first novelty in the shape of a small cap of this form (fig. 2). This cap we fill with composition, pass a post (fig. 3) through the middle, and cool. Then heating the surface only, which has been shaped into a mound about the post, as here shown, we apply it to the root-face, first passing the post into the canal. The effect of the cap and of the mounded form of the composition is to force away the gum from the root-face and give a sharp impression inside the cap, which may be almost instantly cooled by means of a syringe full of cold water. We now remove the cap and post, trim off the composition which is outside the cap, replace the post and cap on the root, and, having wetted the neighbouring teeth, take an impression with my second novelty, a tray with a slot running round the bottom at its outer edge (as shown in fig. 4 or fig. 5). In doing this the post is made to strike the centre of the composition, and is directed towards the front of the tray, which then guides it through the slot. We now cool the impression with a syringe as before—it can be done in a



minute—remove the post and then the impression. The cap is found sitting in the impression, the edge of the metal only being visible. We are now ready to cast the model. We



FIG. 5.

replace the post and fix it with wax applied to the tray, having first fitted on the end of the post which is to enter the cast, a short, roughened copper tube with an open seam

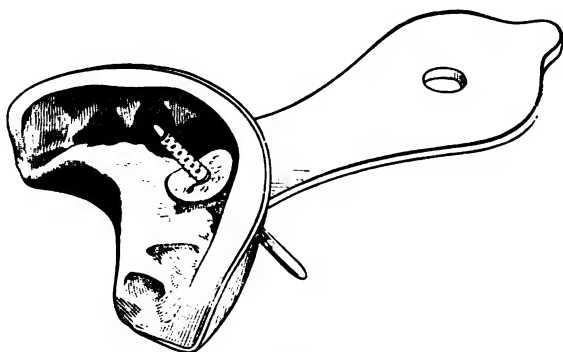


FIG. 6.

(see fig. 6). When the model is cast and the post withdrawn this tube is left behind in the model, and forms the inde-

structible root-canal before referred to (shown at A, fig. 7). The model is, of course, dried and dipped in stearine.

This, gentlemen, completes the description I wished to offer you. You will have seen that the small cap not only secures a sharp impression of the root-face but preserves it from all risk of dragging, while the slot in the tray, if this be properly



FIG. 7.

chosen for the arch, will admit any number of posts at the same time (fig. 8), and this, too, even in the process of taking an impression for a full upper.

I may add that, although it must be rare to find, and often ruinous to make, the canals of two roots parallel, it is easy, with such a model as I have described, to make the projecting

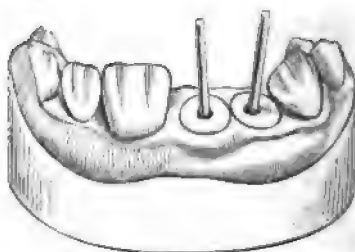


FIG. 8.

portions of the posts inserted in the roots parallel, and the advantages of such posts for securing plates and bridges are obvious.

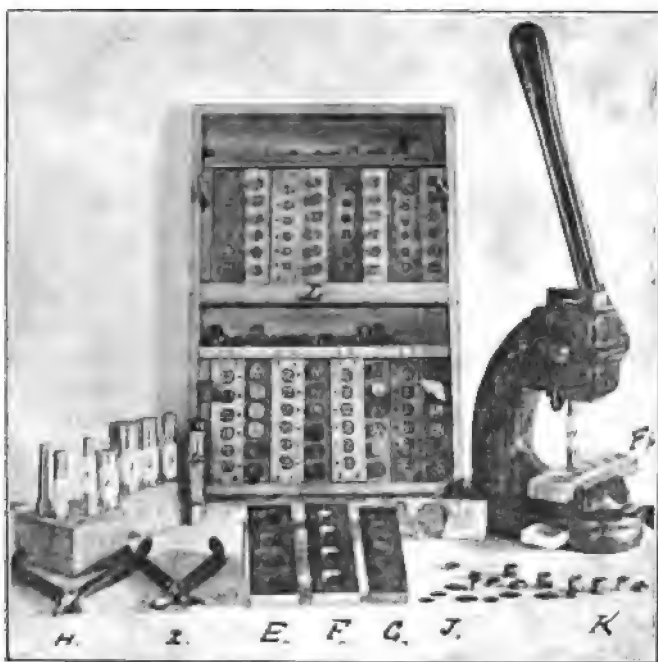
I trust I have made myself clear, but should I not have done so the demonstration to-morrow will help to remove any obscurity that remains.

DEMONSTRATIONS AT THE ANNUAL GENERAL MEETING.

On a Method of Making Seamless Gold Crowns.

By I. RENSCHAW, L.D.S.I.

THIS demonstration was undertaken to show how well and quickly "seamless gold crowns" may be made by means of the late Dr. John J. R. Patrick's crowning outfit. The photograph will explain at sight the whole apparatus, which con-



sists of a small hand-lever press; disc cutters, Nos. 1, 2, 3, 4 and die E; cupping tools A B C, and dies F and Fa; shrinking die, G; crown dies L; adapting and contouring pliers, H and I.

The *modus operandi* is as follows:—

Fix the press securely at the right-hand corner of a bench or table, taking care to have it mounted on a piece of $\frac{3}{4}$ in.

block with a square hole cut transversely through, so that a shallow cardboard box may be inserted to receive the discs as they are punched. Having decided upon the size of disc required, secure the cutter 1, 2, 3 or 4, and die E in the press by means of thumbscrews; place a piece of 22 carat gold No. 4 gauge, on the die plate, bring down the lever handle, and the disc will fall into the receiving box. Now remove the die and cutter, and fix in the same manner the plunger A or B C, and cupping die F or Fa, taking care that the plunger does not touch either side of the die when depressed. The cupping dies are slightly countersunk in order that there may be no difficulty in placing the discs exactly over the centre of the die. Now anneal the gold disc, and place it in the countersunk recess, grease the end of the plunger, and pull down the lever handle gently; stop when half-way down, anneal the gold again, replace in die, and bring down the handle to its full extent, when it will be found that the disc has assumed a thimble-like shape, the depth of which may be varied according to the size of disc used. Now remove the cup or thimble, also the plunger and cupping die, and place on the press one of the crown matrices, and secure stamper D in position in the press. Now take the male die to correspond with the female die selected, anneal the gold cup or thimble, and place in position between the two, and bring down the lever handle as before, and a true representation of the masticating surface of a tooth crown will be the result. It will now be found that the "gold tooth crown" will be wider at the base than at the crown, and of greater diameter than the tooth or root to be crowned, but this can be remedied by inverting it after annealing with the margins downwards in the shrinking die G (a brass plate with tapered holes somewhat approximating to the contour of molar and bicuspid teeth), and steady and firm pressure applied with the thumb. On removal from the shrinking die the thimble will resemble a well-made gold crown, but if on trying it over the tooth or root to be crowned it is still too wide, repeat the process in the smaller hole; but if too tight to go home, open it out gently with the contouring pliers until it clears the margin of the tooth or root: if much too long for the bite shorten with cutting shears. The shape may be improved or modified by cup-shaped contouring pliers H, and the cusps may readily

be elevated or depressed by the cusping pliers I. Supposing the crown to be perfectly adapted to the neck of the tooth or root, strengthen and thicken the masticating surface by flushing the cusps inside the crown with gold solder. It may now be polished on the lathe and burnished with a steel burnisher. When this has been done, well dry the tooth or root, mix some osteo very thin and, after inserting some in the gold crown, put it in position and press it home. By this means a crown may be completed very rapidly.

Gold Filling with Dr. de Trey's (of Basle) Solila Crystal Mat Gold.

By J. CHARTERS BIRCH, L.D.S. (LEEDS).

THE cavity involved nearly the whole masticating surface of the right lower second permanent molar. The rubber dam (Kirby's Red) being adjusted and held in position with one of Ivory's special clamps, the cavity was opened out and prepared with, as far as possible, upright walls, no retaining points or fissures being formed.

The gold is of the crystal mat form, and was first shown at a meeting of the American Dental Society, held at Basle in 1892. Its wonderful cohesive properties and easy manipulation attracted much attention. At that time Dr. de Trey had, however, only prepared it in small quantities for experimental purposes.

At the meeting of the same Society held at Boulogne last August, Dr. de Trey, Jun., was present, and demonstrated with the gold in its latest and most improved form, and kindly supplied Mr. Dall (of Glasgow) and the operator with sample packages.

In appearance the gold very much resembles thin sheets of amadou cut into pieces about 1 in. by $\frac{1}{2}$ in. and $\frac{1}{16}$ in. thick. It is supplied in two forms, the sheet in one being loose in texture, spongy and rather brittle; the other consists of two thin sheets of amadou with a sheet of thin gold between, that it may be cut and used as tape or foil, the enclosed sheet of gold rendering it flexible so that it may be bent over, or forwards and backwards, like thick foil or rolled gold.

A piece of the No. 1 was placed at the back of the cavity

and gently pressed into position with the smooth end of a medium-sized Ladmore's amalgam filling instrument. The gold adapts itself to the walls like a piece of amalgam, and with moderate pressure spreads out under the instrument with a hard, bright, burnished surface, much like that produced by the Herbst rotary method. This does not, however, in any way prevent the adhesion of additional pieces, which may be added and condensed with the greatest ease—in fact, they may be regarded much like pieces of rather dry amalgam, and worked in the same manner. Hand-pressure was used all through, and the filling begun and finished with one instrument, viz., the Ladmore's amalgam plugger. The work was proceeded with leisurely to allow onlookers the opportunity of seeing the *modus operandi*, the time occupied in filling being about twenty minutes. At the conclusion several tried the density of the filling with a sharp probe, and pronounced it as hard as could be desired. The gold is not yet on the market, but small quantities for experimental purposes may be obtained from the Dental Manufacturing Co., London.

Glass Inlaying.

BY W. H. WILLIAMSON, M.D., L.D.S.

DR. WILLIAMSON (Aberdeen) inserted a glass inlay in a right lower canine labial cavity, extending some distance under the gum. He did not consider it a suitable case for glass filling, which he thought was principally adapted for irregular cavities, not too large, and shallow, as one finds towards the tip of a tooth in the incisors. The cavity, a sensitive one, was sprayed with chloride of ethyl—a very valuable application to remove sensibility in such exposed places—and the gum was removed by a lancet, in default of ethylate of sodium. It was pointed out that proximity of gum to the margin of the cavity rendered the proper adaptation of the gold matrix very difficult. Richter's glass inlay materials were used, and for convenience of handling, the gold foil was first attached to a loop of platinum wire on which had been put a little of the glass paste.

Plaster Impressions and Special Trays.

By G. BRUNTON.

THE need for an impression of the mouth of sufficient accuracy to enable the workman to make a denture which will fit well and allow free play for the muscles of the cheeks and tongue, are all met by using plaster of Paris; but the use of plaster does not commend itself to many practitioners by reason of several drawbacks, one of which is the difficulty of getting trays for special cases and the trouble of casting trays in metal or striking them up in dies. This difficulty is overcome by the process which I am about to describe. A preliminary model is taken in every case where a plaster impression is required. On this preliminary model I construct a wax block, to obtain the bite and try in the teeth. I then proceed to make a special tray in this manner:—Two thicknesses of wash leather are taken, moistened and pressed well down over the model. After this a piece of hard material (which is composed of equal parts of stent or godiva modelling compound and shellac, melted together in a pan and rolled out in sheets) is taken, and a portion of it made soft in hot water, and moulded down on the leather. The edges are trimmed with a sharp knife or file. A piece of stout wire is next bent to form a handle, the ends of the wire being heated and bedded into the tray. This step accomplished, the leather is removed. A rigid tray is thus produced, which will not warp with the heat of the mouth. The leather allows sufficient room for a film of plaster, say about $\frac{1}{8}$ to $\frac{3}{16}$ ths of an inch in thickness—a very important point in difficult cases, as the impression has to be broken to remove it from the mouth, and this is more easily done if the film of plaster is of a somewhat equal thickness, instead of having large blocks of plaster standing between the teeth, which require great force to break out.

We will now suppose the tray and patient are both ready. Take two small basins or cups; into each put about two table-spoonsful of a weak solution of potash-alum; have two colouring solutions ready, say aniline violet for one and carmine for the other; put a few drops of colour in each basin; do not mix the colours. Have two small mixers ready in one hand, sprinkle the plaster into the water, stir

both basins at the same time ; put a sufficient quantity of plaster from one basin in the right side of the tray, and from the other basin in the left side, so that when the impression is withdrawn the relative positions of the broken pieces are easily determined. A marbled effect may be produced by using one basin, mixing the plaster with one colour, then just before putting it in the tray, add a few drops of the other colour, and stir very little. I may say I much prefer the two distinct colours.

When the impression is removed from the mouth, it should be rinsed gently in cold water, the broken parts placed in position, and waxed to hold them there. The impression should be again rinsed in cold water, and to prevent its sticking to the model, a thin coat of dilute liquid silicic acid should be painted over the surface and into the depressions formed by the teeth ; the impression is then inverted and allowed to drain off. Pins may be put in, and the cast run in the usual way. The composition called hard-bake, which was invented and used by the late Sir John Tomes for try-in plates more than thirty years ago, and which is composed of gutta-percha and shellac, makes very good special trays. A very convenient basin for mixing plaster in may be made by splitting a celluloid ball (obtainable at toy shops) ; being elastic, they are easily and quickly cleaned in cold water.

The Hydraulic Swager.

By C. D. GRUNDY.

THIS apparatus received a large amount of careful attention.

The main object of the designer has been to arrange a method by which he could line an impression of the mouth, whether of plaster or composition, with a film of tin, or its allies, from which, when cast in the usual way, a model can be produced with a bright metallic surface upon which to vulcanise.

This is accomplished easily and quickly by the contrivance under consideration. Although the lining of impressions is considered by the inventor to be the most important function of the press, its usefulness is not limited to that operation, for by it trial base plates can be made, which are used for mount-

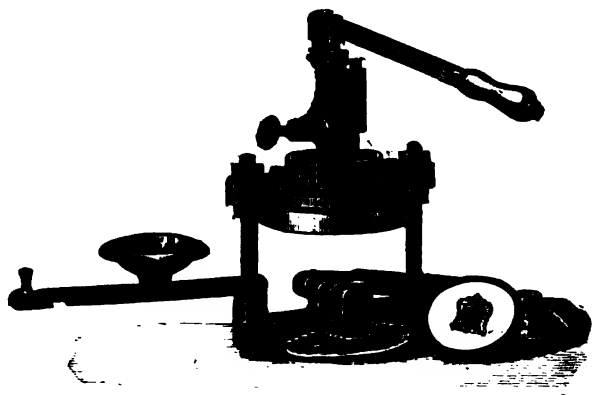
ing up the teeth, and upon which the bite may be taken. These plates faithfully reproduce the rugæ, and give a perfect contour of the mouth, at the same time ensuring an even thickness of the rubber. Polishing plates for the lingual side are quite easily made. A very natural effect may be produced on the labial surface of a full upper or lower case by the use of specially stippled or embossed metal. The advantages of vulcanising between two metallic surfaces are obvious. In addition to the great saving of labour in finishing up the case



by this method (the piece coming out of the flask perfectly polished on both sides) is the great acquisition of strength and temper which the rubber is found to receive, thus enabling one to reduce the bulk of the case, and, at the same time, retaining every element of strength.

The ability to produce a denture with the palatal surface of a smooth and non-irritating character will commend itself to all vulcanite workers.

The idea is simple. Held tightly between the metal ring and upper casting of the press is a piece of sheet rubber, which forms the floor of a shallow chamber, above which is a hydraulic pump. On one of the pillars is a swinging bracket, on which is placed one of the cups containing the impression or model to be covered. This when brought round into position is exactly centred with the upper part. Below is a cam, operated by a handle at the side, by the movement of which the cup is pushed upwards into position and locked there. To line an impression with tin, one of the cups is nearly filled with plaster. The impression still in the tray is pressed into it (a slot in the cup allowing the handle to go



through). When the plaster is set and trimmed, a piece of the sheet metal of a suitable size is placed on the impression and the whole brought into position under the rubber. The lever of the pump is now worked. The water pressing on the top side of the rubber causes the latter to carry down the soft metal into close contact with the mould. Pressure is now relieved by turning the thumb screw, the water flowing into a reservoir on the top of the inner chamber ready to be used again—the whole operation taking about one minute to perform.

The inventor has had the apparatus in use a sufficient length of time to assure himself of its capabilities, and it is

intended shortly to place it upon the market. In the meantime he will be pleased to answer any inquiries regarding it.

Crystal Mat Gold.

By H. B. EZARD, L.D.S. EDIN.

A LARGE crown cavity in a lower molar, which involved nearly the whole crown, was chosen for this demonstration. The filling was started with a promiscuous mixture of crystal golds (Neddon's, Steurer's, &c.), and finished with crystal mat gold, this being preferable owing to its form. In using, mat gold must be well annealed on a nickel tray, and lifted uncrushed into the cavity with a needle point or amalgam spoon. Dr. Husband's right and left egg-shaped pluggers will be found the most useful; very little force is used, as the gold must be more insinuated into the cavity and undercuts than packed in the accepted sense of the word. Cramming is to be particularly avoided. There must be a surplus of filling which is condensed with the electric mallet, and then heavily burnished with apple-seed and hook burnishers until the surface is dense even to a sharp probe, and the edges are solid.

The filling is finished with "dead" finishing burs, oiled. (The cavity was prepared, filled, and finished within three-quarters of an hour.) Fillings inserted in this manner three years ago are looking as well as cohesive foil, and better than cylinder fillings.

The use of crystal gold can only be advised in simple and easily accessible cavities, and for starting foil fillings. For cervical edges it is invaluable owing to its almost plastic adaptation. It is extremely useful in chalky teeth used in conjunction with plastic cement with which it can be incorporated in the same manner as amalgam, care being taken that the cement does not exude at the margins.

Newland-Pedley Porcelain Crown.

By MONTAGU F. HOPSON, L.D.S. ENG.

THE method advocated is as follows:—The root canal having been sterilised and the apex sealed, a crown and pin are selected. In this care must be taken to choose a crown

which requires the least possible fitting; from the large selection available such an one can nearly always be found, and the trouble taken is amply repaid, both in the time subsequently saved and in the original strength of the crown being maintained. It will be apparent that the crown is weakened in proportion to the amount of fitting required. Another point of no less importance is to see that the pin *fits* the hole in the crown which receives it. The face of the root is roughly cut down with a White's fenestrated root trimmer, and finished off with a carborundum wheel. When the root is free from caries on its lingual aspect, that portion is not cut down below the gum line, but left standing a little above it, a true self-cleansing joint in this position being so obtained. The root canal is next reamed out with a tapered reamer, to *fit* the pin, which for front teeth has a flattened oval in section. If necessary the pin is bent to bring it into proper alignment with the hole in the crown. Having placed the pin temporarily in position, the crown is fitted down in a manner similar to that employed when letting down an ordinary tube tooth. The colouring matter used at the demonstration to facilitate fitting was composed as follows:—

Creta. prep....	...	...	...	...	3iv.
Glycerine	...	...	...	...	3iii.
Carmine	...	...	...	...	gr. ii.
Ol. geranii	...	...	...	...	ʒiii.

a preparation which met with the approval of the members who witnessed the demonstration. The pin is fixed first, and then the crown, one mixing of cement being sufficient.

In reply to many questions the demonstrator said that when the crown failed it was the crown which came away from the pin and not the pin from the root, and he attributed the failure to want of attention to the points mentioned above in selecting the crown. To obtain a good result a sound face to the root was a necessity. Where the bite was close he should prefer a Richmond crown, believing it a stronger one under such circumstances. The particular advantages claimed were, the ease and consequent quickness with which it could be adjusted, and the large selection that could be obtained at the depôts. In his experience bicuspid went better than front teeth. It was not by any means a universal crown, but it certainly filled a place in crown work.

Porcelain Inlays.

BY W. DALL, L.D.S.GLAS. (GLASGOW).

Mr. DALL demonstrated the use of his right and obtuse angle mechanical mallets in gold filling on a pocket phantom. The use of his silver cylinders, which he annealed before using, for removing the excess of mercury from amalgam fillings. The making of a porcelain incisor tip from a plate molar tooth which was made in seven minutes, the making true and reducing of round inlay rods, and cutting inlays from them with a No. 2, $\frac{1}{8}$ -inch S. S. White diamond disc, revolved at great speed, showing plainly that the disc so revolved, with little or no pressure, cut so much better than a disc used slowly and pressed to its work, and that the edges of the inlays, while being cut, were not so apt to be chipped. In addition to his demonstrations he exhibited inlays, specimens of inlay work, ancient and modern, and large model teeth having detachable parts, all of which were greatly admired.

Mr. J. BIGG (Glasgow), showed a patient with cleft palate, which he had treated by mechanical means.

The demonstrations by Mr. Harry Rose and Mr. Gartrell will appear in future issues.

MR. STIRLING was to have given a demonstration on "Root-filling with Oxy-chloride of Zinc," but owing to a patient not being forthcoming the demonstration was not given.

THE PREPARATIONS OF MESSRS. BURROUGHS WELLCOME, & Co.—From Messrs. C. Ash and Sons, who are the sole agents in the dental world, we have received a case containing samples of the various medicaments used in dental practice. The system of administering and stocking drugs in tabloid form is fast gaining ground, but up to the present it has been difficult to obtain the preparation in general dental use in this form. Messrs. Burroughs, Wellcome & Co. have now introduced a large number of new preparations, and we feel quite certain that if only given a trial they will be found extremely convenient and useful, and with an increased demand, no doubt fresh ones will be introduced.

LEGAL INTELLIGENCE.

Compensation for Disturbance.

JOHNSON *v.* THE MANCHESTER, SHEFFIELD AND LINCOLNSHIRE RAILWAY COMPANY.

THIS case was heard on October 1, at the London Sheriffs Court, Bloomsbury, before Mr. Under-Sheriff Burchell and a special jury.

Mr. Walter Edward Johnson, dentist, of Newton Lodge, Finchley New Road, St. John's Wood, claimed from the railway company £2,205 as compensation for the destruction of his premises consequent upon the construction of the new line to London, the chief terminus of which will be at St. John's Wood.

Mr. Philbrick, Q.C., and Mr. Reginald Browne appeared for the claimant; and Mr. Littler, Q.C., and Mr. Coward for the railway company.

The claimant, Mr. Johnson, stated that his business as a dentist, in 1893, after taking into account every possible deduction, showed a profit of over £100; in 1894, £120; and up to August 31 this year the books showed that the present year's working would have been a profit of close upon £320. It would be impossible for him to secure suitable premises in the neighbourhood under a rental of £300 per annum. In cross-examination witness said that the railway company had offered him a house close to the one he had been compelled to quit, but, owing to a tunnel being constructed through the garden at the back of the premises, and the Metropolitan Railway running in front, the house was altogether unsafe, and would assuredly collapse at no distant date. Even if it were safe, the noise and vibration caused by the passing trains would be disastrous to his business, as patients would naturally refuse to have teeth drawn when the house was shaking like an "aspen-leaf." In further cross-examination witness said that he had once made his claim £1,850, but afterwards altered it to £2,205, and he then changed his solicitors, because he thought it was high time, seeing that they advised him to accept £520, which was the estimate of the Board of Trade. He thought this sum was not sufficient, and he intended to get as much as he could from the railway company.

The jury assessed the damages at £1,000.

APPOINTMENTS.

VAN DER PANT, F. J., Dental Surgeon to the Princess Louise Home for Friendless Girls.

MINOR NOTICES AND CRITICAL ABSTRACTS.

The History of the Cusps of the Human Molar Teeth.*

BY HENRY FAIRFIELD OSBORN.

DA COSTA PROFESSOR OF BIOLOGY, COLUMBIA COLLEGE, NEW YORK.

MR. PRESIDENT AND GENTLEMEN,—I wish to congratulate the members present upon the formation of this Institute of Stomatology. It seems to me to mark one of the stages in the remarkable specialisation of human knowledge when, at the present time, it is proposed to devote the work of an entire society to the scientific study of the mouth parts, as I understand your object to be; and I also gather from the fact that you have asked me, as a comparative anatomist, to deliver an address this evening, that you look at the subject in two ways—from the standpoint of applied or practical science, and from the standpoint of theory. It is on the theoretical side that I should like to bring before you this evening the history or origin of the cusps of the human molar teeth.

We take up this skull of an Eskimo, and you will observe that the teeth are slightly worn, and that the molars have four cusps.† Half a century ago this would have been considered as something ultimate, simply as an adaptation to human diet; but now that we have come to understand the doctrine of evolution, we ask ourselves, What is the meaning of these cusps? What is their history? What is their origin? Now, these four cusps which are present on the four corners of the teeth might be explained by evolution in three ways. We might imagine that the crown of the tooth was originally a low rounded summit, and that on the summit these four cusps appeared at each angle; no one has advocated this. Or we might imagine that they represent the coming together of a number of tips of pointed teeth, such as we see in the jaw of this member of the dolphin family; this is the theory which has been recently advanced in Germany, and it has been called the cusp concrescence theory. Or, again, we might imagine that these cusps have originated by a gradual addition to the sides of a primitive single cone; this we call the "cusp differentiation" theory, or the theory of cusp addition, in distinction from concrescence. The differentiation theory is supported by Cope, by myself, and others in this country.

Now, suppose an evolutionist were to trace back the history of the monkeys and of other animals among their fossil ancestors, he would find that the further back his researches extended the more simple the types of the teeth would be; he would find that the teeth of the oldest types of ancestral mammals have a simple conical form, the form that is preserved in the teeth of the whales and the dolphins of the present day, or in the Edentates, as represented in the group to which the sloth and the armadillo of South America and South Africa belong.

* Address before the New York Institute of Stomatology, April 19, 1895.

† E. D. Cope, "On the Tritubercular Molar in Human Dentition."—*Journ. of Morphology*, July, 1888, p. 7.

We have the same type of conical tooth preserved in the human canines, and if we turn from the teeth of man, in which the canine has almost entirely lost its original laniariform, or flesh-tearing shape, to that of the lower monkeys, we see that the canine is really a pointed tooth; so that we may draw a suggestion from this fact that all the teeth of the series at one time were pointed.

It is moreover true that wherever we find these pointed teeth they are present in the jaw in large numbers, sometimes sixty or seventy on one side, and usually running far back into the mouth, and it is this fact which led to the suggestion of the theory of "conrescence" in the formation of molar teeth.

The Conrescence Theory.—You might not at this stage be inclined to take this "conrescence theory" seriously, but my address has been suggested largely by the fact that it has been taken very seriously by some well-known anatomists in Germany; as seen in the position of Professor Schwalbe,* in a recent article, in which he reviews the entire



FIG. A.

Section of the upper and lower jaws of a dolphin, showing the alternation of simple conical teeth of the reptilian type.

literature in regard to the formation of teeth published during the last fourteen or fifteen years, and concludes that in the conrescence theory and the differentiation or cusp addition theory the evidence is so evenly balanced that he cannot decide between them. It is, therefore, a question *sub judice*, and worthy of the attention of odontologists. As to the source of this theory, it was proposed simultaneously by two Germans, both of whom claim the credit of originating it. One is Dr. Carl Röse, a physician of Freiburg, a man of fine powers of research and great energy, since he has, during the past few years, issued in rapid succession a series of valuable papers on the embryological development of the teeth, which place him in the front rank of students of this subject in this decade. The other is Professor W. Küenthal, of Jena, whose views sprang principally from the study of the teeth of whales. While these two writers are in doubt as to which should enjoy the precedence, I find, in correspondence with my friend, Dr. Ameghino, of the Argentine Republic, also originally a physician and now a distinguished palæontologist, that he promulgated this theory as far back as 1880. In a work which he published at that time entitled "Filogenia," he says, "For the reasons we are about to give it is evident that all mammals which possess compound teeth have in past periods possessed a very much larger number of teeth, but of quite simple conical form, like those of

* "Ueber Theorien der Dentition," *Anatomischer Anzeiger Centralblatt*, 1894.

the modern dolphin. The most primitive mammals must also have had a number of very elevated teeth, but it is difficult at the present time to determine how large this number was. Nevertheless, if we take as an example a mammal in which the dentition is complete, as in the *Macrauchenia*† or in the horse, and if we reduce the number of its compound teeth, we find that the most remote ancestors of these forms must have possessed more than one hundred and fifty teeth. This number is certainly not exaggerated, because *Prodon*, the giant tatusia, a mammal in an already quite advanced stage of evolution, possesses nearly one hundred simple teeth, and in the dolphin this number rises from one hundred and fifty to one hundred and seventy." I read this to show that if there is any truth in the concrescence theory, Dr. Ameghino partly deserves the credit for it. Moreover, we learn from Schwalbe that the same theory was advanced by Professor Gaudry in 1878, and still earlier by Professor Magitot in 1877.

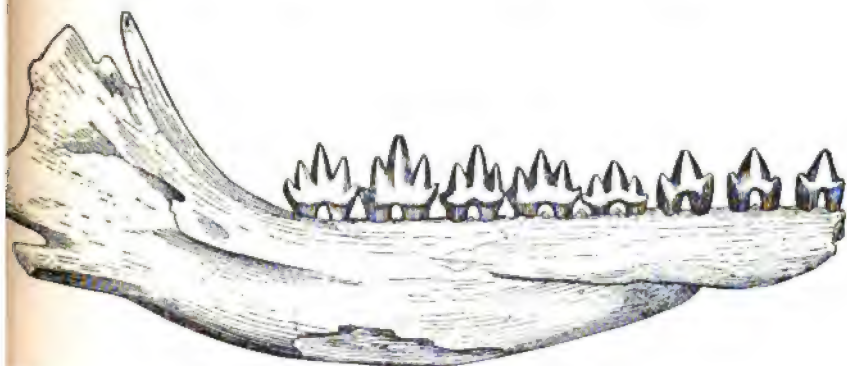


FIG. B.

Fragmentary lower jaw of a Jurassic mammal, *Amphilestes*, showing five triconodont molars, with three cusps in line. Greatly enlarged.

Now let me illustrate, in a very simple manner, what is meant by the theory of concrescence, and how we can imagine that the human molars have been built up by bringing together a number of isolated teeth. Placing a number of conical teeth in line, as they lie in the jaw of the whale, they would represent the primitive dentition. In the course of time a number of these teeth would become clustered together in such a manner as to form the four cusps of a human molar, each one of the whale tooth points taking the place of one of the cusps of the mammalian tooth—in other words, by a concrescence, four teeth would be brought into one so as to constitute the four cusps of the molar crown. Vertically succeeding teeth might also be grouped.

Now, what evidence is there in favour of this theory, and what is there against it? First, there is this, that all primitive types of

† This is one of the peculiar extinct South American hoofed animals.

reptiles from which the mammalians have descended, and many existing mammals, as we have noted, have a large number of isolated teeth of a conical form ; secondly, we find that by a shortening of the jaw, the dental fold or embryonic fold, from which each of the numerous tooth-caps is budded off in the course of development, may be supposed to have been brought together in such a manner that cusps which were originally stretched out in a line would be brought together so as to form groups of a variable number of cusps according to the more or less complex pattern of the crown.

What may be advanced against this theory? This, and it is conclusive to my mind : we find at the present time that cusps, quite similar in all respects to each of the cusps which form the angles of the human molar, are even now being added to the teeth in certain types of animals, such as the elephant, whose molar teeth cusps are being complicated now or until very recent times. Then we find in the mesozoic period certain animals with tricuspid teeth. Now, according to the theory of concrescence, these teeth ought not to show any increase of cusps in later geological periods ; but as we come through the ages nearer to the present time we find that the successors of those animals show a very much larger number of cusps. How is this increase of cusps to be accounted for? Has there been a reserve store of conical teeth to increase the cluster? No. Most obviously, to every student of the fossil history of cusps there is no reserve store, but new cusps are constantly rising up on the original crown itself by cusp addition.

However, do not let me give you the impression that these researches of Röse and Kükenthal are not of the greatest value and interest : we shall see later on how the very facts of embryology which are advanced by Dr. Carl Röse in support of his hypothesis can be turned against him and used to support the differentiation theory.

The Differentiation Theory.—Now let us turn to the differentiation theory and see what evidence we have of that. Let us go back to a very remote period of time, through the geological ages of the Pliocene and the Miocene, through the Eocene, through the Cretaceous or chalk period, and even the Jurassic. Still further back we go to the Triassic, and the interval between this and the present period has been estimated at over ten million years. Now, in the Triassic, we find the mammalia, or the first animals which we can recognise as mammalia, possess conical, round, reptilian, or dolphin-like teeth. There are also some aberrant types which possess complex or multi-tubercular teeth.

These teeth begin to show the first traces of cusp addition, as shown in the plate.

Here (Fig. 1) we have represented the teeth of the *Dromatherium*, an animal found in the coal-beds of North Carolina, and on the sides of the main cone are cusps or rudimentary capsules. In this enlarged model you see that on either side of the main cone are two cusps. These teeth were found six hundred feet below the surface in a coal-mine, and in the same mine we find another animal, represented by a single tooth, here (Fig. 2), in which these cusps are slightly larger. These cusps have obviously been added to the side of the tooth, and are now growing. Then we pass to teeth of the Jurassic period, found in large numbers both in America and in England, but still of very minute size ; and we observe the same three cusps, but these cusps

have now taken two different positions ; in one case they have the arrangement represented in Fig. B., page 627 : the middle cusp is relatively lower, and the lateral cusps are relatively higher ; in fact, these cones are almost equal in size ; these teeth are termed *triconodont*, as having three nearly equal cones. But associated with this of *Triconodont* is another animal named *Spalacotherium*, the teeth type of which are represented in Fig. 4. This is one of the most significant teeth which we have among all the fossil series, because this tooth

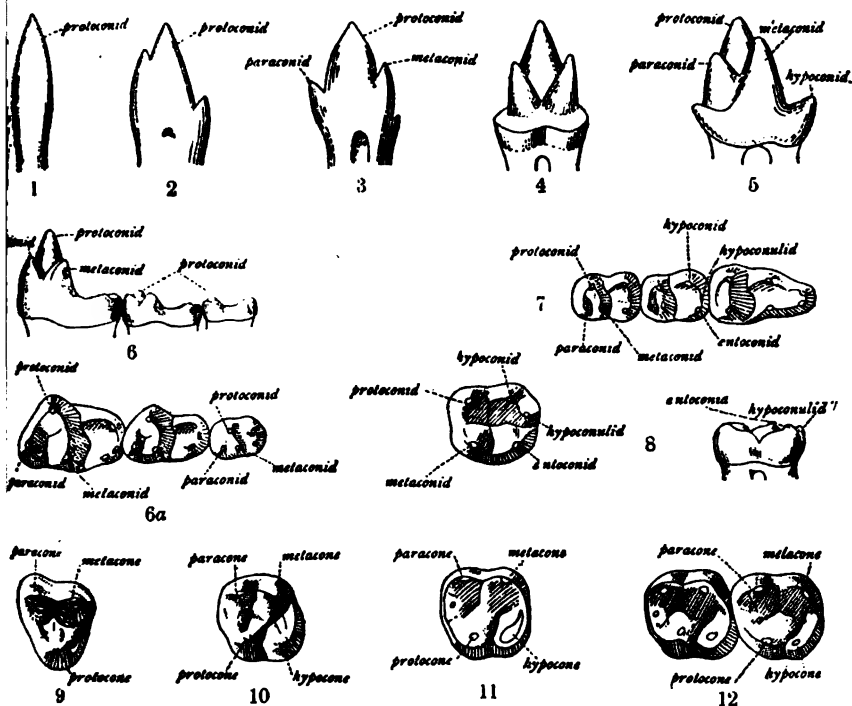


PLATE AA.

illustrates the step that was taken in the transformation of a tooth (triconodont) with three cusps in line to a tooth with three cusps forming a triangle ; for the primitive cusp is now seen to be the apex of a triangle, of which the two lateral cusps are the base. Now this fact in itself is of great significance, because this tooth in this single genus is the key of comparison of the teeth of all mammalia of the great class to which man belongs. By this we are able, as you shall see, to determine that part of a human molar which corresponds with a conical reptilian tooth.

The stage shown you is the triangle stage ; the next stage is the

development of a heel or spur upon this triangle, as you see in Fig. 5, *Amphitherium*. To sum up: we have a reptilian cone, two cusps added to it, and a heel—four cusps altogether, and we shall now see what relation these bear to the human molar.

First let us turn to some transitional forms. Examine a molar of the living opossum, a marsupial, which still distinctly preserves the ancient triangle. Look at it in profile, in side, or in top view, and see that the anterior part of that tooth is unmodified. This triangle we also trace through a number of intermediate types.

In this figure (Fig. 6) of *Miacis*, a primitive carnivore, we observe a high triangle and a heel, and when we come to look at it from above (6a) we find that the heel has spread out broader, so that it is as broad as the triangle. Now, the three molars of this animal illustrate a most important principle—namely, that the anterior triangular portion of the crown has been simply levelled down to the posterior portion of the crown. Compare these three teeth, therefore, and you see illustrated a series of intermediate steps between a most ancient molar and the modern molar of the human type. The second tooth is half-way between the first and third. Look at the second molar from above and you see it has exactly the same cusps as the first, so it is not difficult to recognise that each cusp has been directly derived from its fellow. Now direct attention to the third tooth of the series (Fig. 7), for it is of equal significance with the others. This tooth has lost one of its cusps: it has lost a cusp of the triangle. It is now a tooth with only half the triangle left on the anterior side, and with a very long heel. That tooth has exactly the same pattern as the lower human molar tooth (Fig. 8); the only difference is that the heel is somewhat more prolonged. These teeth belong to one of the oldest fossil monkeys, *Anaptomorphus*.

I have no doubt many of you have observed, in the examination of human lower molars, that occasionally, instead of having four cusps they have five. The fifth cusp always appears in the middle of the heel, does it not, or between the posterior lingual and the posterior buccal? You find this in the monkeys and in many other mammals, but I know of no record of the ancient anterior lingual reappearing.

So we see that the human lower molar tooth with its low, quadrangular crown has evolved by addition of cusps and by gradual modelling from a high-crowned, simple-pointed tooth. Now this, and I say it with great confidence, is what has actually taken place. It has not come about by bringing together single reptilian cones; it has been simply by the addition of one cusp after another to an original single reptilian cone until there were six cusps, and then, in the adaptation and fitting of the lower teeth to the upper, one of the cusps has disappeared. This cusp was the primitive anterior lingual, or, in comparative anatomy, the *paraconid*.

Now let us follow the history of the upper teeth and see why the "primitive anterior lingual," or *paraconid*, in the lower jaw has disappeared.

You are constantly, in your practice, observing that one tooth in the lower jaw gets into the way of another tooth and has to be pushed out of place in order to place its opponent in the upper jaw into its proper position. This is exactly what Nature has done; Nature has abandoned the lower cusp simply because, in the simultaneous transformation of the upper teeth from a three-cusp to a four-cusp type, there was no room for it.

Mechanical Relations of the Upper and Lower Teeth.—Let us examine the upper teeth. We must say, in the first place, that our evidence here is not nearly so complete, because a lower jaw, from its

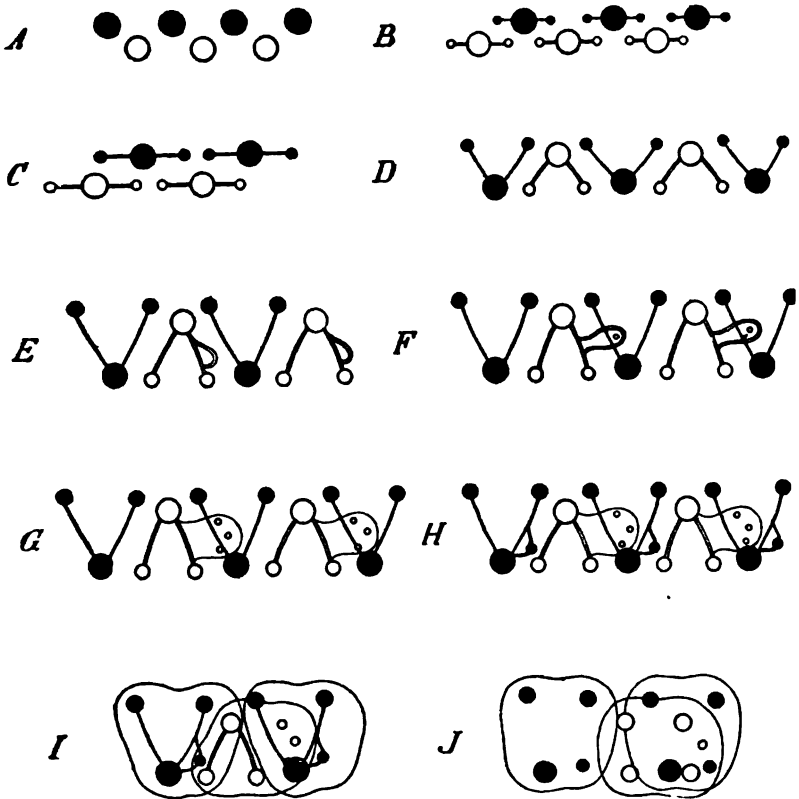


PLATE BB.

MECHANICS OF CUSP ADDITION (DIAGRAMMATIC).

Compare with shaded figures in Plate AA and Key.

A, the conical stage (fig. 1); *B*, *C*, the triconodont stages (figs. 2, 3); *D*, the first triangular stage (fig. 4); *E*, *F*, *G*, the triangular upper molar, the lower molars, with triangle and heel (figs. 5, 6, 7, 9); *H*, *I*, upper and lower molars, with triangle and heel; *J*, human type, upper molars, with four cusps, triangle and heel (figs. 10, 11, 12); lower molars, with five cusps, antero-internal cusp having disappeared (fig. 8).

thin nature, is more apt to be preserved fossil than an upper jaw; so that in the older rocks we meet with ten lower jaws to one upper jaw,

and we cannot get the same evidence as to the history of the upper jaw that we have of the lower ; but although we are not able to trace the history of the upper teeth with the same accuracy or degree of certainty, we have every reason to think it was the same. We find the upper teeth shaped like a triangle, as in Fig. 9, so we may imagine that the same triangle which was formed in the lower jaw was formed in the upper jaw, with this important difference, that in the upper jaw the base of the triangle was turned outward, whereas in the lower jaw the base of the triangle was turned inward.

What I mean by this is illustrated in the accompanying Plate BB, Figs. *A*—*J*, which are an epitome of the whole history. The upper teeth are represented solid, the lower teeth as hollow circles.

In *A*, we see a row of single cusps, the lower somewhat inside of the upper. In *B* the lateral cusps are added. In *C* they are enlarged. In *D* the cusps are pushed outward and inward into triangles. In *E* a spur is added on the lower molar triangle, which in *F* and *G* grows out into a broad heel. In *H* and *I* a spur appears upon the upper molar triangle, and in *J* this causes the lower molar triangle to lose its anterior cusp. Nature has corrected any possible interference between these triangles in a simple manner by turning the base of the triangle of the upper molars outward towards what you call the buccal side. In the lower jaw, on the other hand, the base of the triangle is turned inward to the lingual side, so that finally we have the two triangles alternating, coming together as in *D* and making a beautiful cutting mechanism ; because if any food gets in between these triangular shears the food tends to press these teeth forward and backward, therefore crowding the teeth more closely together and tending to tighten and improve the shear, whereas if the teeth were placed in line, as in *C*, and food were to get in between, the effect would be to crowd the two jaws apart and lessen the exact cutting power of the shear.



FIG. C.

Lower teeth in the left jaw of a seal *Leptonyx leopardinus*, showing five triconodont premolars and molars, with three cusps in line.

Now we see that we can compare the lower and upper triangles to each other. How about the heels or spurs, and why were they developed? They were developed because these animals required crushers as well as cutters ; they required to break up their food and consequently a crushing surface was developed in each heel. In the course of time the animal gave up its cutting and tearing function, and in all the group of animals to which man belongs it acquired a purely crushing function, as seen in the teeth of the baboon. As that became necessary, the next step was to transform the entire upper

tooth into a crusher as well as the lower, and to fill out all the spaces between them, so that a square lower tooth would abut against a square upper tooth, as in *J*, and this was done by simply adding a heel to this tooth. Now, what would that heel come against in *I*? It would come against the anterior cusp of the lower triangle; therefore that cusp had to be removed and the lower molar, which had six cusps, presented only five; then the second lingual cusp was pushed forward, as in *J*, and the tooth was transformed into quadritubercular molar.

Evidence that the Upper Human Molars were Triangular.—How do we know that is so? We have some conclusive evidence of it in other animals of the group to which man belongs. Beginning with the lemurs, the lowest type of monkeys, and entirely separate in many respects from the higher types, we find almost without exception that the upper teeth are triangular, there being no posterior cusp, so that Fig. 9, Plate AA, accurately represents a tooth of the lemurs, and it also represents a tooth of the true monkeys which we find in the Eocene period; in other words, all monkeys or all primates of the group to which man belongs had at the outset this triangular upper molar. Then earlier or later in the Eocene or Miocene the spur began to be developed which transformed a three-cusp tooth or a triangular tooth into a quadritubercular tooth. That spur became enlarged and finally, in civilised races of men, we have a tooth of this form as the prevailing type of tooth. These stages are shown in Plate AA, Figs. 9, 10, 11, 12.

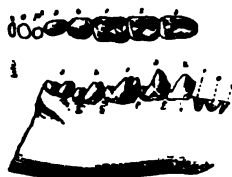


FIG. D.

External view of lower jaw and crown view of teeth of a lower Eocene monkey, *Anaptomorphus homunculus*. One and a half natural size. Collection Am. Mus. Nat. Hist.

Now, we might say that the evidence is not perfectly satisfactory, because we have no positive reason for believing that the human teeth were derived from such a type as this; they may have come along another line of descent, and for that reason we have to show here, through the kindness of one of the members of the dental profession in this city, the teeth of an Eskimo, which, as Professor Cope has pointed out, differ from the teeth of all negroes, all Indians, and all the lower races of men, in presenting in a much clearer manner the primitive triangular arrangement of the cusps that characterise the lemurs. A friend has just been telling us what very few of us knew—that the Eskimos do not chew their food; they simply swallow it whole or gulp it down; and their food consists largely of blubber. Blubber does not form much resistance to the

teeth, and, whether as a mechanical or an inherited effect of the lack of resistance of soft food through many generations of blubber-eating Eskimos or not, the teeth of these Eskimos are exceptionally *tritubercular*. This fact was pointed out by Professor Cope in his article entitled, "Lemurine Reversion in Human Dentition."*

Up to a certain point in their evolution the molar teeth of all mammals followed exactly the same route. It follows that if we once grasp the principles of cusp addition upon this triangular ground plan we can compare the cusps of the molars of man with those of any other mammal. In the teeth of the bear, for example, the homology is very obvious indeed. But in the teeth of the cat the homologies can only be determined when we procure the ancestral forms of cats, for in the evolution of the large sectorials many cusps have degenerated. Some years ago, when I had fully demonstrated the truth of Cope's theory by my own studies, I saw the importance of using a set of standard terms for the cusps. These have since been almost universally adopted by comparative anatomists, but have not as yet, I believe, made much headway among human odontologists. They are as follows, as applied to the human teeth :

UPPER MOLARS.

Anterior palatal	Protocone	} Primitive triangle, or "trigon."
Anterior buccal	Paracone	
Posterior buccal	Metacone	
Posterior palatal	Hypocone	} Primitive heel, or "talon."
Anterior buccal	Protoconid	
Anterior lingual	Metaconid	} Primitive triangle, or "trigonid."
Posterior buccal	Hypoconid	
Posterior lingual	Entoconid	} Primitive heel, or "talonid."
Posterior mesial	Hypoconulid	

When we understand that all the teeth of all mammals have this key, this tritubercular key, we can unlock the comparisons through the series and point out the homologies.

There is further evidence in support of the theory of cusp addition which I will now briefly mention. It is that brought forth by the very investigations of Dr. Carl Röse which he has used to support the concrescence theory. We should expect, in the embryonic jaw, that the calcification of the tooth-germ would be very significant, because we know that the embryonic structures in their development follow the order of addition or evolution. The order of evolution is, to a certain extent, repeated in embryonic development. How is it with the teeth? Dr. Röse has given a most exact account of the mode of calcification of the tooth-germ within the jaw; this is also now to be had in the form of wax models, prepared by Professor Zeigler, of Freiburg.

To begin with the lower molars, the dental cap in the jaw forms a broad, saucer-like surface, and then at the corners of that cap calcified points appear. In what order do they appear? The order is shown in the following table :—

* *Journal of Morphology.*

COMPARISON OF EVOLUTION AND EMBRYONIC DEVELOPMENT.

	Order by "Cusp Addition Theory."	Order of Embryonic Development.
UPPER MOLARS	1. Anterior palatal.	1. Anterior buccal.
	2. } Anterior buccal.	2. Anterior palatal.
	3. } Posterior buccal.	3. Posterior buccal.
	4. Posterior palatal.	4. Posterior palatal.
LOWER MOLARS	1. Anterior buccal.	1. Anterior buccal.
	2. Anterior lingual.	2. Anterior lingual.
	3. Posterior buccal.	3. Posterior buccal.
	4. Posterior lingual.	4. Posterior lingual.
	5. Posterior mesial.	5. Posterior mesial.

In the lower molar teeth the order of calcification is precisely the order of evolution—in other words, the anterior buccal was the first to evolve, representing the reptilian cone; it is also the first to calcify. The anterior lingual is the second in age and also the second to calcify. The third and the fourth cusps calcify almost simultaneously. So we find that the order of embryonic development exactly repeats the order of historical development and in every way presents the strongest kind of confirmation of the theory of cusp formation which we have been discussing. But this you see is not exactly the case in the upper molars. Nevertheless, out of eight cusps in the upper and lower molars considered together, *six* cusps calcify in the order in which they were successively added to the single reptilian cone.

Gentlemen, I trust that I have not in this address taken you too far afield. I have reached a conclusion on this subject which could be elaborated in much greater detail. In closing I would like to refer to the work of Dr. J. L. Wortman, who is here this evening, and who was for some years a collaborator with Professor Cope in Philadelphia, and who in association with Professor Cope had quite a share in the establishment of the "tritubercular or cusp addition" theory. This theory is now a rival to the "conrescence" theory; and, while it may not seem a matter of great importance, if the conrescence theory may not seem one we ought to take seriously, still, in view of the attention which it has gained in Germany, it is time that we produce and bring forward the unimpeachable evidence which we get of the history of these teeth from the rocks, the solid evidence from the geological formations, the evidence of comparative anatomy, which, as we have just seen, is so far supported by the evidence of embryonic development.

BIBLIOGRAPHY.

Works of reference in addition to those cited above:—

Röse, "Ueber die Entwicklung und Formabänderung der menschlichen Molken." *Anatomischer Anzeiger*, Band 7, 1892.

Kükenthal, "Ueber den Ursprung und die Entwicklung der Säugethierzähne." *Jenaische Zeitschrift für Naturwissenschaft*, Band 28, 1893.

Osborn, "The Evolution of Mammalian Molars to and from the Tritubercular Type." *American Naturalist*, 1888, p. 1067.

"The History and Homologies of the Human Molar Cusps." *Anatomischer Anzeiger*, 7, 1892, pp. 740-747.

Cope, "The Mechanical Causes of the Development of the Hard Parts of the Mammalia." *Journal of Morphology*, iii., 1889.

—*The International Journal*.

The Classification of So-called Green-Stain.

By W. C. BARRETT, M.D., D.D.S. Buffalo, N. Y.

PROBABLY 50 per cent. of the teeth that fall under the observation of the dentist are affected by some form of pigmentation. Dentists have speculated upon it ever since there was a dental profession; but until the time of Miller there never was, so far as I know, any such series of scientifically conducted experiments to positively determine its nature and character as could be accepted as definite. I cannot but believe that he has permanently settled the question of the etiology of this appearance, in the memorable article appearing in the *Dental Cosmos* for April, 1894. If he is right, that determines its classification. After the president of this society had refused to accept my declination of the honour which he tendered me nearly a year ago, that of preparing this paper, it was my good fortune to have Professor Miller as my guest for some days, and we went over this whole subject together. I was then, as now, convinced that those who have criticised his article as inconclusive either had not read it carefully or had not comprehended it fully. It was inconclusive in so far as it failed to support the crude theories previously advanced, but it was conclusive in establishing the fact that the so-called green-stain is usually a superficial deposit, and that it probably has no special pathological significance, except for diagnostic purposes.

When Dr. Miller was at my house, he had with him a large number of teeth exhibiting the stain, some of it green, some brown, some red, with the varying intermediate shades. There were the teeth of children, and of adults at different ages. There were a few cases in which, beneath the stain, was found eroded enamel, and there were many instances in which no sign of decalcification existed under it. There was indisputable stain upon decayed tissue, and it dropped into and followed the depressions of furrowed enamel; but in no instance, so far as I could observe, did it appear other than as a distinctly superficial deposit. We removed the enamel-cuticle, or Nasmyth's membrane, from teeth upon which there was a marked pigmentary deposit, and in every instance the stain came with it, leaving the tissue beneath it clear, white, and unmarked. This was the case in instances of furrowed enamel, in teeth with eroded enamel, and in those in which the enamel seemed comparatively perfect. Let me say, however, that teeth whose enamel is uneroded, smooth, and polished are less frequently affected by stain, for the same reason that salivary and other deposits are not likely to be found on polished surfaces. It requires depressions, either minute or more defined, to afford lodging-places for the initial deposits, and hence eroded enamel is more predisposed to pigmentation than that which is perfect.

For purposes of classification I shall make no distinction between the green, the blue, the black, the brown, or the red stain or their intermediate shades. Clinically they are the same, and they have the same generic origin. If they are metallic in their source, the colour depends upon the metal whose compounds form the stain. If they are due to bacteria, it depends upon the nature of the chromogenic organisms. Hence, no distinction will be made, except as indicating the origin of the discolouration.

Mineral sources. — As one important factor, I will mention the metallic deposits that we frequently find upon the teeth—usually the

incisors—of workers in copper, bronze, brass, iron, mercury, lead, nickle, and silver. This has all been pointed out by the authority that I have mentioned, and he also refers to the fact that trumpeters often show a discolouration brought about by the contact of the teeth with the brass mouth-piece of their instrument. The teeth of tailors, also, are often discoloured by the colouring-matter of the cloth in which they work. Among one hundred and fifty persons, workers in brass, bronze, and copper for more than one year, whom Miller examined, he did not find a single individual who did not show more or less of green-stain upon the upper teeth, and this in varying shades. I may say that I have myself examined about fifty such, with nearly the same result, the only exceptions being in persons who were fastidious in the care of their mouth, or whose teeth were encrusted in other deposits.

There are many animals whose teeth are covered by shining metallic deposits. These are chiefly or wholly among the *graminivora*. In some species the teeth of nearly every individual appear as if freshly gilded. In others they are quite black. Miller says he has found manganese deposits upon the teeth of the elephant, rhinoceros, dromedary, elk, deer, and cow. We all know that superficial discolouration is frequently found at the margins of amalgam fillings, and workers in mercury are liable to special deposits upon the teeth. The very hair of copper-workers becomes discoloured, and their teeth form no exception.

Fermentation of Organic Matter.—The white cheesy deposit that is found about the necks of teeth, especially such as suffer from neglect, is apt in the course of the fermentation which it undergoes to become discoloured, or, rather, to leave about the necks of the teeth a pigmentary deposit. This may arise from the mixture with it of mineral substances which are finally precipitated, or it may be the result of the chemical changes through which the matter passes. This cheesy deposit may have either an acid or an alkaline reaction, according to the character of the fermentation which is going on. If it be acid, the erosion of the teeth beneath it may be easily comprehended. We have but to reflect that the surface of the cervical portions of the tooth being thus superficially decalcified, if the character of the fermentation should change, and mineral or other pigmentary matter become a constituent of the deposit, it may be precipitated upon the eroded surface of the tooth, and thus give origin to a distinct stain.

Chromogenic Bacteria.—It is well known to all observers that certain forms of micro-organisms produce a distinct colouring matter. Many of the macroscopic fungi do this, and we find the most brilliant colours in the mushrooms, moulds, &c. Deposits about the teeth may become infected with these chromogenic or colour-producing bacteria, and thus the tissue will be stained yellow, red, or some other colour.

Sanguinary Deposits.—I believe it to be the case that in some instances the discolouration of the teeth is due to deposits from the blood. Miller says that if in the presence of air or oxygen a current of sulphuretted hydrogen is brought in contact with fresh blood, sulphomethæmoglobin will be formed, which is greenish-red in concentrated and green in dilute solutions. It is not probable that this will be a very important factor in the production of these coloured deposits, yet it will account for some instances.

Foreign Organic Matter.—We all know that the teeth of tobacco-users become deeply dyed in some instances. This is not usually

confined to any special locality, but if when applied, as it usually is, alike to all portions of the tooth it stains, one may readily comprehend that other substances may be introduced into the mouth whose action will, because of limiting circumstances, or through non-liability of some of the tissues to their effects, cause a pigmentary deposit.

The Green-Stain of Childhood.—Thus far we have considered only the discolouration that may be found on the teeth of adults. It is evident that the same rules as to classification cannot obtain in the case of children. We must eliminate the metallic causes and search for other origins. Sufficient still remains in the action of ferments. There is not the same diversity in the colour of the pigments, and this leads to the conclusion that there are fewer causes to classify. At first thought, we might imagine that the enamel-cuticle plays an important part in the green-stain of childhood, but it has been shown that it has appeared upon the surface of phosphate fillings in the deciduous teeth. That it may be changed by the application of bleaching-agents like peroxide of hydrogen, would indicate that it is of organic origin, although it does not positively demonstrate it. There is a constant decomposition of food about the teeth, and bacteria are especially active in the oral cavities of children. The secretions of the mucous glands, that are somewhat specialised at the gum-margins, are frequently degenerated, and, under the action of ferment organisms, decomposed, and this may cause a pigmentary deposit, which will naturally follow the festoon of the gums and give the crescentic appearance which the green-stain of childhood usually presents. It follows, then, that this form of discolouration should probably be classed with those which are of fermentive or bacterial origin.

Conclusions.—The chief point of interest to us, as dentists, arises from the question as to whether these stains are an etiological factor in pathological conditions. I am well aware that this properly forms no part of the task assigned me, but it is impossible to range the different forms of discolouration into classes without reference to their origin. The part assigned me is utterly barren, if the pathological significance of the deposits cannot be adverted to. From what I have already said, it may be gathered that I have little faith in the pathological significance of green-stain, and that I hold the belief that we, as practitioners, need not trouble our heads about it, except to remove it by mechanical means. The erosion that is often found beneath it must have preceded its deposit, for it invariably ceases when there is a complete coating over the eroded places. It never penetrates beneath the enamel-cuticle when that exists upon the tooth. It may be dissolved by chemical agents, and the most careful chemical analysis shows nothing in it that would be injurious. While it may be infected by bacteria, and while the stain may be the effects of micro-organisms, it cannot be shown to entirely consist of those organisms. Heide and Charpentier believed it to consist of leptothrix threads, but later observations show that this was a manifest error.

I cannot conceive of any further classification of the stains of the teeth than through the sources of the pigmentation, and these are so widely variant that, practically, they are numberless. I have enumerated some of the more prominent ones, and leave the subject with you in the hope that further information may be elicited in the discussion of the subject.—*The Dental Cosmos.*

Amalgam and how to Manipulate it.

By DR. A. C. HEWITT.

THE cavity should be prepared as conscientiously as for gold filling, sterilised and desiccated. To aid in doing the latter readily the following may be used as dental desiccant :—

R.—Alcohol (pure)	fl. 3v.
Chloroform	fl. 3ijj.
Beta naphthol	grs. v.

M. Apply to flood the cavity thoroughly and evaporate with warm or heated water.

I use the term "desiccated" in the sense of the definition given by Dunglison ("Med. Dict.", 21st edition), *i.e.*, "draining, drying." Not only should salivary moisture be removed, but that lying in the tubules, the dentinal plasmasomes, and the unctuous film along broken enamel rods. I lay stress on this part of the work, for if moisture lies back of the imposed plastic, especially if the alloy contains copper, there will be oxidation and precipitation of salts to blacken tooth substance and invite influx of oral fluids.

Unless we realise how difficult it is to bar moisture from any place, we will under-estimate the need of the care advised. Next, the surfaces to be covered in by the amalgam should be coated well with some resinous solution for two purposes. First, to bar moisture, and second to form a sticky base in and on which to grind particles of the alloy. For this purpose the following is what I have used with gratifying success :—

R.—Sandarach varnish,	
Damar varnish.....	āā fl. 3j.
Alcohol (absolute)	fl. 3j.
Beta naphthol	gr. v.

M. Apply as a varnish.

When the liquids have evaporated, leaving the resins as a lining for the cavity, the dentine and enamel should receive another coating, this time of amalgam burnished on to the varnish with a smooth-point amalgam plugger, flat-faced or "shot" pointed, till the cavity floor and walls take on a mirror-like surface. By thus burnishing the amalgam on the walls, every tubule and enamel interstice will be filled and brightened over.

The amalgam for this first coating may be well saturated with mercury, but only sufficient of the moist mass left to form a thin coating, all surplus possible being "poked" or burnished out of the cavity. From thence on, amalgam wrung through heavy muslin or chamois only is to be used ; one layer after another burnished on to the preceding one, each added mass being as dry as can be and cohering to the preceding one. If free mercury is thus brought to the surface of the plug, it should be "poked" or burnished out before another dry mass is added. Keep the growing mass dry. Thus build till the cavity is "rounding full," care having been taken that every undercut, fissure, nook and corner is densely filled, not with free mercury, but with the alloy. When the cavity is more than full, "rounded over" like a bushel of potatoes in a basket, coax the the surplus mercury to the highest point by gentle pats or tapping with the plugger, and while thus atop, absorb it (free mercury) with tin foil No. 4, rolled into balls,

or what is better, "bricks" of Watt's crystal gold No. 2, freshly annealed in a lamp flame. When the free mercury is thus disposed of, the surplus amalgam is to be burnished down to a proper level with a hand-shot point, or a steel "Herbst" point in an engine hand piece, rapidly driven, moving the instrument from the centre toward and over the enamel borders. Thus the line of free mercury, always tending to cling to enamel border, will be taken up and carried off by the drier surplus portion of the filling. Before removing the dam, varnish the plug. In mixing the amalgam, the bare palm of the hand and the bare finger should never be used. Enough oil and moisture, from a bare palm, can be worked out to saturate an ordinary sized mass for a filling. Dry the cavity; keep it dry. Prepare the amalgam, free from oils and water; pack densely; absorb surplus mercury. At a future sitting, polish the filling. If good alloy is used and this care is taken in the manipulating, but few workers will live long enough to see the need of a repair.

Of course, some cavities can only be filled "submarine." Then try gutta-percha till above high-water mark.—*Items of Interest.*

Two Cases of Severe Trigeminal Neuralgia due to Nasal Disease.

By M. P. MAYO COLLIER, M.S.Lond., F.R.C.S.Eng.,

VICE-PRESIDENT OF THE BRITISH LARYNGOLOGICAL AND RHINOLOGICAL ASSOCIATION.

OF the numberless cases of "tic" recorded in the various journals and other publications, an extremely small proportion have been attributed to nasal disease. In an immense majority of the recorded cases the nose has apparently never been examined at all, and this in face of the fact that there exists a ganglion called the sphenomaxillary or nose ganglion, and that this ganglion is closely associated with the main trunk of the second division of the fifth nerve, and distributes branches to almost the whole of the interior of the nose and nasopharynx. Granted that a very large number of these cases of trigeminal neuralgia are due to peripheral irritation, common sense would suggest an examination of such an extensive surface of peripheral distribution as the interior of the nasal cavities. In the two cases I am about to relate the nose was never examined until I was consulted, and in the first case a distinguished surgeon had counselled the serious procedure of the removal of the infra-orbital nerve without looking into the patient's nose. To be brief, in the early part of last summer my colleague, Dr. Cagney, requested me to see a poor woman who was a martyr to facial neuralgia of a severe type and of some twelve years' duration, with a view to the examination of her nose. Even a breath of air, or, indeed, the slightest contact with lips, tongue, or face, would precipitate an attack of agonising pain, the patient moaning and grinding her teeth with the severity of the paroxysms. The removal of teeth and exhibition of medicines and galvanism failing, an operation on the infra-orbital nerve was about to be performed just previous to my being consulted. My examination revealed extensive disease of the middle turbinated bone on the same

side as the neuralgia. I sat down there and then in the presence of Dr. Cagney and removed with the cold snare the greater portion of the diseased structures. From that day and hour the neuralgia practically ceased, and, with the exception of a few slight relapses due to the accidents incidental to the healing process in the nose, the woman was and still is completely relieved of her misery. A short time after this another colleague, Dr. Leonard Guthrie, hearing of this woman's case, and having under his care, in concert with Dr. Turner of the Regent's-park Hospital, a severe and intractable case of trigeminal neuralgia, kindly suggested that I would take the case in hand also and see what I could make out of it. Curiously, this was a repetition of the last case. The nose had not been examined. The disease had lasted four years and the attacks were becoming more frequent and more severe. In this case a marked deflection of the nasal septum would have baulked any but a skilled observer, but the probe told a tale of diseased middle turbinated bone with numerous polypi. These were at once removed, and but for one or two occasional twinges the neuralgia has disappeared, apparently never to return again. Both these cases were residents in the wards of the North-West London Hospital, and have been exhibited cured, after some months, before the British Laryngological Society, the North-West London Clinical and other societies.—*Lancet*.

OBITUARY.

Thomas H. Chandler.

WE notice with regret the death of Thomas Henderson Chandler, A.M., LL.B., M.D., D.M.D., late dean and professor of mechanical dentistry in the Dental School of Harvard University. He was one of the original staff of the Harvard Dental School, and held the post of dean for twenty-one years. Although not a prolific writer, he contributed at times valuable papers to the different medical and dental journals, the principle article being one on "Thumbsucking in Childhood and its Results." He was also the translator of two works on dental caries, the one by Leber and Rottenstein, the other by Magitot. He died on August 27, at the age of 71.

Louis Pasteur.

By the death of Louis Pasteur, which took place on September 28, medicine has lost one of her most able and distinguished servants. Louis Pasteur was born at Dole, Jura,

December 27, 1822, and took the degree of doctor in 1847. In 1848 he was appointed Professor of Physic at the Faculty of Sciences at Strasburg. At the end of 1854 he was entrusted, as dean, with the organisation of the newly created Faculty of Sciences at Lille. The year 1857 witnessed his return to Paris to undertake the scientific direction of the Ecole Normale, where he was educated. In December, 1863, he was appointed Professor of Geology, Physics and Chemistry at the Ecole des Beaux Arts, and was elected a member of the Institute. The Royal Society of London, in 1856, awarded M. Pasteur the Rumford Medal for his researches relative to the polarisation of light, &c. Decorated with the Legion of Honour in 1853, he was promoted to be an officer of the Order in 1863, and a commander in 1868. Of late years M. Pasteur had devoted himself to the study of inoculation for diseases other than small-pox, and achieved remarkable results in the prevention of hydrophobia. Honours have been plentifully bestowed upon the distinguished scientist. As far back as 1874 the National Assembly accorded to him a life annuity of 12,000 francs for his investigations on fermentation. His election to the French Academy took place in 1882.

MISCELLANEA.

DENTAL TROUBLES AMONGST THE CHITRAL FORCE.—As far as can be gathered from the lay papers, odontalgia seems to have been very prevalent among the officers of the Chitral Force. The question seems to have received the attention of the executive, and *The Civil and Military Gazette* states that Sir Robert Low has advised the Government in all future expeditions to appoint a staff of dentists, with a principal dental officer attached to the headquarters staff.

AN ALPHABETICAL CATALOGUE.—We have received from Mr. Francis Lepper, of Great Marlborough Street, London, W., a catalogue arranged upon an alphabetical basis. This is as far as we can remember the first time such a catalogue has been published in England. The method is a good one,

and will no doubt save time and worry in looking up the particulars and prices of any special article.

FACIAL HEMIATROPHY AFTER INFLUENZA.—A curious case of facial atrophy following influenza is recorded in the *Lancet*, September 14. A girl aged twelve suffered from a severe attack of influenza two years ago, and a few weeks later had sharp pains in the face. The parents soon noticed a wasting of one side, and when she came under observation it was found that the hair on the left side of the head was thinner and the skin wasted as low as the corner of the mouth. Below this level the opposite side of the face was affected in a similar way. The changes were most marked in the skin and the subcutaneous tissues, but the bones also showed distinct changes. Dr. Berend refers the changes to an affection of the first and second divisions of the nerve on the left side, and to a similar affection of the third branch on the right side.

INTRA-CRANIAL OPERATIONS ON THE FIFTH NERVE.—The *Lancet* for September 21 contains a short note on an important paper published on this subject by F. Krause in the fiftieth volume of Langenbeck's *Archiv*. Of the eight cases operated upon by Krause only one died, a man aged 72, whose death occurred, six days after the operation, from heart failure due to atheroma of the coronary arteries. The others all did well, and in no case in which there was total removal of the ganglion has any recurrence of pain as yet taken place. In the only case in which Krause restricted himself to an operation on the second division of the nerve there was recurrence of pain, and then the ganglion was removed and the pain disappeared and remained absent. A comparison of the cases operated on by Rose's method and those operated on by the method of Krause and Frank Nartley shows a mortality of 18 per cent. in the former and 9.8 in the latter. Curious functional disturbances are described as following the operation. Sometimes there is difficulty in opening the mouth, apparently determined by contraction taking place in the muscles of mastication. In spite of the complete anæsthesia of the cornea and conjunctiva, only in one case was there observed by Krause a slight corneal ulcer, which quickly healed. The masseter, temporal,

and pterygoid muscles were weakened on the affected side, but little inconvenience resulted. The peculiar and varying sensory impairment in the different regions is also described, and finally the indications for this very radical operation are clearly set out.

SYPHILITIC TEETH WITH ICHTHYOSIS.—An interesting case of ichthyosis in a patient exhibiting characteristic syphilitic teeth is recorded (*Loire Medicale*) by Dr. Roussel. The patient was a girl, aged 21. The upper and lower incisor and canine teeth presented characteristic defects. The stem of the whole body was mal-nourished, dry, rough, and inelastic. The outer aspects of the arms was covered with small projections due to hypertrophy of papillæ. The summits of these projections were crowned by horny pelli-cules, which could be rubbed off. The legs, particularly externally, presented a similar condition, being covered with small papules, of which the summit was formed by a scale. Desquamation existed also at many points where papillary projections were not present. If a considerable extent of skin were drawn together by the hands it showed very plainly the ichthyosic appearance—that is, a great number of lozenge-shaped markings became visible, with their centre occupied by an epidermic lamella. On the body were numerous small cicatrices, and one larger on the sacral region, white, elongated and adherent. The smaller of these markings were attributed to a previous attack of small-pox. This is the second case in which Dr. Roussel has noticed ichthyosis and syphilitic teeth in the same subject.

THE COMPOSITION OF MICRO-ORGANISMS.—A method of examining micro-organisms, which consists in an investigation of their proximate and ultimate composition, has been inaugurated by Schweinitz and Dorsel. Tubercle bacilli were found to contain cellulose, together with palmitic and arachidic acids; on the other hand, the glanders bacillus appeared to contain no cellulose, whilst the acids present were oleic and palmitic. The germs were cultivated on the same media, and, with the exception of the nitrogen, there seemed to be but little variation in their composition when the medium was varied. The following are the results of

the elementary analyses of three forms as given in the *Pharmaceutical Journal*.

	Nitrogen.	Carbon.	Hydrogen.	Ash.
Tubercle bacillus ...	7.34 to 8.94 p.c.	62.98 p.c.	7.34 p.c.	1.77 p.c.
Glanders „ ...	14.05 „	41.89 „	5.89 „	5.18 „
Swine plague „ ...	11.81 „	44.57 „	7.20 „	12.41 „

The marked differences in these figures would seem to indicate that the results may prove of some value in aiding classification, and the authors announce that they are continuing the investigation in the case of other disease germs.

THE TREATMENT OF ACTINOMYCOSIS BY INJECTIONS OF IODIDE OF POTASSIUM.—The value of iodide of potassium administered by the mouth in cases of actinomycosis, has attracted the attention of medical men during the last few years, and although in most cases a beneficial effect is produced, there are a few which do not improve under the treatment, the actinomycotic lesions recurring and extending. In these cases Dr. Rydygir thinks that injection of 1 per cent. of iodide of potassium into the mass of the tumours may produce good results, and he is led to this belief from two cases in which he has tried this line of treatment. In one case the cure was practically complete, while in the other, although treatment was interrupted before complete recovery had ensued, the result obtained pointed to the great efficacy of the injection of iodide.

THE RELATION OF THE FOLLICLES OF THE PERMANENT TEETH TO THE FLOOR OF THE ANTRUM.—In a communication to the *Dental Review* for June, Dr. Fletcher records the result of his examination of five hundred crania. One important feature noticed is the relation the follicles of the permanent teeth bear to the floor of the antrum. He states “that the dental follicles holding the crowns of the superior molar teeth, in normally shaped antra, are usually formed at the expense of that cavity, each follicle being covered with a dome which protrudes into the floor of the antrum, while the tooth is being formed and pushed into the mouth; this dome flattens out and disappears by the time the tooth is completed, excepting in rare cases, and it seems a perfectly natural result, when we remember that the alveolar process is formed only after the eruption of the teeth, its position and shape being entirely

governed by the position and shape of the teeth ; there is then no other place where the crowns can find space enough for their development, but the one mentioned at the expense of the antrum. The finding of some of these domes in the floor of the antrum, in connection with some bony processes, may account for the description by anatomists, to the effect that the roots of the molar teeth protrude into the floor of this cavity, and are either bare or covered with bone, forming numerous bony tubercles corresponding to the apices of the sockets of the teeth. Other authors taking these as authority, have perpetuated this statement, until it seems the prevailing opinion that this is the normal condition. Contrary to general belief, it is the exception rather than the rule when the apices of the roots of the second bicuspid and the buccal roots of the molars are in contact with the floor of the antrum."

THE REMOVAL OF STAINS FROM TEETH.—In speaking upon this subject at the Dental Society of New York, Dr. Palmer referred to the following as being useful methods for removing the green stain so often met with in teeth. (1) The application to the stained surface of iodine, followed by weak aqua ammonia (or aromatic spirits), repeating the applications at the same or a subsequent sitting until the stain disappears; (2) removal of oily deposits from the teeth by the application on cotton, of ammonia or bicarbonate of soda, followed by clear water, and this by 25 per cent. pyrozone, well rubbed in with cotton or a leather buff, followed in turn by soda to neutralise the slight acidity and mitigate the occasionally caustic effects on the softer tissues. This latter treatment is effective to a remarkable degree, usually accomplishing its purpose promptly and always without injury to the teeth, either as to structure or lustre, which we have demonstrated repeatedly as well out of the mouth by immersing teeth in caustic pyrozone for periods of two weeks at a time. In case the enamel is roughened and dissolved nearly through to the dentine, a stone wheel, fine grit and broad face will give a better surface by grinding the prominent portions down, which will lessen the depression. In the event of sensitiveness, it is better to make two or more operations, leaving the surface polished each time. To reach deep pits the small brushes used with the engine do nice work by cutting them

back one-half the length and to a point—they are better than wooden points to hold the powder.

ALUMINUM SUCCESSFULLY HARDENED.—The successful tempering of aluminum, so as to give it the consistency of iron, has, according to *Industries and Iron*, been discovered by F. Allard, of Quebec, whose re-discovery of the lost Egyptian art of hardening copper startled the mechanical world three or four years ago. "He has made and hardened a cannon, which has just been tested in the presence of Col. Spence, the American consul, and a number of others, with success. This cannon is 28 inches long, 5 in. in diameter, the metal outside the bore being only $\frac{1}{4}$ in. thick. A charge consisting of a pound of powder was fired out of this without any appreciable effect upon it. Allard has been asked to manufacture as soon as possible a cannon 12 feet long, for direct shipment to Washington."

KLEINWORT RUBBER-DAM.—A sample of this rubber-dam was recently forwarded to us by Messrs. Ash and Sons. From a trial of it in practice it can confidently be said to be as good as any other variety in general use. It is free from smell, fairly light in colour, and has not the tendency to split which is sometimes the case. The rubber is supplied in pieces 9 in. by 6 in., and is therefore rather wasteful, as one sheet is hardly sufficient for two cases and generally too much for one.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I find in *Ash's Quarterly Circular* for the present quarter two cases recorded by H. Carlson, D.D.S., of total anæsthesia resulting from the injection of chloride of ethyl. Several similar instances have occurred in my own experience. In each case the patient was a child, and the period of unconsciousness lasted a few seconds only, being just sufficiently prolonged to allow of the painless extraction of a tooth.

76, Merton Road, Bootle,
Liverpool.

Yours, &c.
W. J. PIDGEON, L.D.S.E.

BOOKS RECEIVED.

UTILITÉ DE LA PHOTOGRAPHIE DANS LES RECHERCHES D'HISTOLOGIE ET DE BACTERIOLOGIE, par M. J. Choquet. *Chateauroux*: Imprimerie et stéréotyp. A. Majesté et L. Bouchardeau, 2, Rue Gutenberg, 1895.

DENTAL MATERIA MEDICA AND THERAPEUTICS, by James Stocken, L.D.S.Eng. Fourth edition, revised by Leslie M. Stocken, L.R.C.P., M.R.C.S., L.D.S., and J. O. Butcher, L.D.S. *London*: H. K. Lewis, 136, Gower Street, W.C., 1895, pp. 155.

DIE NATURLICHE WIEDERHERSTELLUNG DES ZERSTÖRTEN MENSCHLICHEN GEBISSES OHNE AUWENDUNG VON GEBISS-PLATTEN. *Wien*: Heinrich Hamecher, 1895.

Items of Interest, The Therapist, Guy's Hospital Gazette, The Cosmos, The Dublin Journal of Medical Science, L'Odontologie et la Revue Internationale d'Odontologie, The British Journal of Dental Science, The Ohio Dental Journal, Revue Internationale de Médecine et de Chirurgie Pratiques, The Birmingham Medical Review, The Chemist and Druggist, The Dental Record, The Medical Press and Circular, The Pharmaceutical Journal, The Dental Register, The Dental Digest, Deutsche Monatsschrift für Zahnheilkunde, C. Ash & Sons Quarterly Circular, The Medical Review, The Dominion Dental Journal, The International Dental Journal.

Letters and other Communications received from:—

W. H. Williamson; Walter Campbell; F. Lepper; G. Brunton; F. J. Van der Pant; F. E. Chandler, U.S.H.; C. D. Grundy; Fielden Briggs; Montagu Hopson; J. Stirling; Herbert B. Ezard; W. Dall; J. H. Gartrell; George Thomson; Frank V. Richardson; T. A. Goard; J. F. Tracey; Dr. Med. Matti Ayräpää; K. Creswell.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. II. NOVEMBER 15, 1895. Vol. XVI.

The Chloroform Question.

WE publish in this issue a paper by Dr. Frederic Hewitt, entitled "An Inquiry concerning the Safety and Sphere of Applicability of Chloroform in Dental Surgery," which was read and discussed at the recent Annual Meeting. To judge from the paper, Dr. Hewitt's investigation has been distinguished throughout by evident impartiality, by unsparing search for all the facts obtainable, and by moderation in drawing conclusions. As an exposition of this important and complicated subject, the paper is further to be commended for its clearness of idea and diction; while, viewed as an argument, it is pervaded by an obvious anxiety for the truth that adds much to its weight. Our knowledge of the subject has, in fact, received a tangible accession; and though we have taken no pains in the past to conceal our views, we welcome this opportunity of

reviewing the matter in the light of the proceedings at Edinburgh.

It would be hard to name any group of therapeutic agents that is more certain in result, more controllable in action, and less injurious to any and every type of patient — always remembering the magnitude of their effect—than are the agents used to produce general anæsthesia. At the same time deaths occasionally occur while a patient is anæsthetised. Such events are always distressing, but how much more so when they happen in dental practice? For dental operations, however necessary, are comparatively not grave, and rarely exceed the category of operations of expediency. Also the victims have been usually in fair or good health. The importance to our profession of reducing these calamities to, or about, the vanishing point needs surely no further insistence. The matter deserves, nay, demands, our gravest attention. The position is this. Cases frequently arise in dental practice in which some other anæsthetic than nitrous oxide must be used, and the choice lies between chloroform, alone or in a mixture, and ether. Now it has been for some years a matter of common surgical knowledge that ether is safer than chloroform. Furthermore, ten years ago the statement was made that "Deaths from ether do not occur in the healthy;" and, being as true as such a generalisation can be, this has never been attacked. The large increase in the use of ether in London bears witness to these beliefs. In the provinces, however, owing to its convenience, chloroform is still undoubtedly more generally used than ether; while in Scotland, the home of chloroform, ether is rarely employed. So that an inquiry into the fatalities in dental operations in Great Britain, during a long enough period, was calculated to reveal some important facts. This inquiry has been made, and

those facts are described by Dr. Wallace, an advocate of chloroform, as "most startling."

It is not our intention to follow the argument closely; the paper must be read for itself. Suffice it to say that Dr. Hewitt in 1895 has brought to light fourteen deaths, connected with general anæsthetics administered for dental operations, which occurred in Scotland during fifteen years. In thirteen of these cases chloroform was employed. During the same period in London there was apparently no death in connection with chloroform under similar circumstances: the two fatalities recorded were connected with the use of nitrous oxide. Again, in England and Wales, excluding London, there were eighteen deaths in connection with chloroform, as against three fatal cases in which other anæsthetics were employed. This gives altogether no less than thirty-one deaths connected with chloroform, out of a total of thirty-seven. Every care appears to have been taken to bring forward any consideration bearing upon the question, with the result that the conclusions are only strengthened. The risk attaching to the use of chloroform in dental operations is therefore proved. The question as to whether the use of chloroform in dental operations is ever justified at once presents itself. Such cases are few, and amount to those in which nitrous oxide is inefficient and ether is inadmissible. Dr. Hewitt's answer is that patients who suffer from great dyspnoea caused by some heart, lung, pleural, or abdominal affection, and who require the removal of several difficult teeth, are proper subjects for chloroform. This would seem to exhaust the list.

The discussion of the paper is noteworthy. Although presumably the case for chloroform could nowhere be so forcibly put as at Edinburgh, yet the facts adduced by Dr. Hewitt remained unanswered. The ingenious speech of

Dr. Wallace was but an attempt to weaken the conclusions of the paper. In complaining that the relative number of administrations of the different anæsthetics in various parts of Great Britain was not forthcoming, he was asking an impossibility. He also urged that patients in whom ether would be contra-indicated should not be included for comparison if they die under chloroform. The reply is not far to seek. In the table of nineteen fully recorded fatalities which accompanies the paper, there is no case for which ether would have been unsuitable. And indeed, experience in surgical operations, where the patient's condition is not unfrequently very bad, has shown that the cases which do not permit of ether have no special mortality under chloroform. Dr. Wallace also alluded to the large proportion of the recorded chloroform fatalities in which asphyxia was the cause of death, and deduced the conclusion that the administrator was often at fault. This is beside the question. The accidents occur, however produced, and if chloroform is specially unsafe in unskilled hands, there is not such a danger with ether. Which brings us to the relative convenience question—the cause of it all. Chloroform is easy to administer, ether is difficult. Moreover, many doctors have never been taught to give ether. These things were insisted upon by several speakers, and very properly so. Well, the remedy is very clear—it is indeed obvious. There can be not the slightest doubt in the mind of an unprejudiced person who is familiar with the facts we have stated, as to the need for instruction in ether-giving at our medical schools. Neither is there any doubt of the ability of every medical practitioner, in the near future, to successfully administer ether. But to hasten the matter may save many lives, and we therefore strongly commend the earnest consideration of this paper and discussion.

List of the Executive Officers and Members of the Representative Board of the British Dental Association.

THE following is the revised list to the present date :—

President—W. BOWMAN MACLEOD, L.D.S. Edin.

President-Elect—FREDERICK CANTON, L.R.C.P. Lond., M.R.C.S.,
L.D.S. Eng., L.S.A.

Vice-Presidents.

Sir EDWIN SAUNDERS, F.R.C.S. Eng.

Dr. JOHN SMITH, F.R.C.S. Edin.

J. SMITH TURNER, M.R.C.S., L.D.S. Eng.

Treasurer—E. G. BETTS, M.R.C.S., L.D.S. Eng., L.S.A.

Hon. Secretary—W. B. PATERSON, F.R.C.S. Eng., L.D.S. Eng.

REPRESENTATIVE BOARD.

President—S. J. HUTCHINSON, M.R.C.S., L.D.S. Eng.

Vice-President—W. H. BREWARD NEALE, L.D.S.I.

W. B. MACLEOD, L.D.S. Edin., Edinburgh.

A. S. UNDERWOOD, M.R.C.S., L.D.S. Eng., London.

J. H. MUMMERY, M.R.C.S., L.D.S. Eng., London.

W. E. HARDING, L.D.S. Eng., Shrewsbury.

FREDERICK CANTON, L.R.C.P. Lond., M.R.C.S., L.D.S.
Eng., L.S.A., London.

S. J. HUTCHINSON, M.R.C.S., L.D.S. Eng.

L. MATHESON, L.D.S. Eng., London.

STORER BENNETT, F.R.C.S. Eng., L.R.C.P. Lond., L.D.S.
Eng., London.

D. CORBETT, Junr., F.R.C.S.I., B.A. Dub., Dublin.

GEORGE CUNNINGHAM, L.D.S. Eng., D.M.D. Harv., M.A.
Cantab., Cambridge.

Elected 1893.

H. BLANDY, L.D.S. Edin., I. & Glas., Nottingham.

G. BRUNTON, Leeds.

LAWRENCE READ, L.D.S. Eng., London.

W. H. COFFIN, London.

J. ACKERY, M.R.C.S., L.D.S., London.

W. H. BREWARD NEALE, L.D.S.I., Birmingham.

W. HERN, M.R.C.S., L.D.S. Eng., London.

H. BIGING MASON, L.D.S. Eng., Exeter.

J. C. STOREY, L.D.S.I., Hull.

A. A. MATTHEWS, L.D.S. Eng., Bradford.

Elected 1894.

C. S. TOMES, F.R.S., M.A. Oxon., M.R.C.S., L.D.S. Eng.,
London.

W. H. WOODRUFF, L.D.S. Eng., London.

J. T. BROWNE-MASON, L.D.S. Eng., Exeter.

FRANK HARRISON, M.R.C.S. Eng., L.D.S. Edin., Sheffield.

AMOS KIRBY, L.D.S. Eng., Bedford.

J. S. AMOORE, L.D.S. Eng., Edinburgh.

C. REES PRICE, L.D.S. Eng., Glasgow.

A. HOPEWELL SMITH, L.R.C.P. Lond., M.R.C.S., L.D.S.
Eng., Boston.

Elected 1895.

J. A. BIGGS, L.D.S. Glas., Glasgow.

ALEX. KIRBY, L.D.S. Eng., Bedford.

EX-OFFICIO MEMBERS.

JOHN HUMPHREYS, L.D.S.I., <i>President.</i>	Central Counties Branch.
A. E. DONAGAN, B.A. Cantab., L.D.S. Edin., <i>Hon. Sec.</i>	
R. P. LENNOX, <i>President.</i>	Eastern Counties Branch.
W. A. RHODES, L.D.S.I., <i>Hon. Sec.</i>	
A. W. W. BAKER, M.D. Dub., M.Ch., F.R.C.S.I., L.D.S.I., <i>President.</i>	Irish Branch.
G. M. P. MURRAY, F.R.C.S.I., <i>Hon. Sec.</i>	
E. LLOYD-WILLIAMS, L.R.C.P. Lond., M.R.C.S., L.D.S. Eng., L.S.A., <i>President.</i>	Metropolitan Branch.
SIDNEY SPOKES, M.R.C.S., L.D.S. Eng., <i>Hon. Sec.</i>	
J. C. STOREY, L.D.S.I., <i>President.</i>	Midland Counties Branch.
I. RENSHAW, L.D.S.I., <i>Hon. Sec.</i>	
W. B. MACLEOD, L.D.S. Edin., <i>President.</i>	Scottish Branch.
REES PRICE, L.D.S. Eng., <i>Hon. Sec.</i>	
JOSEPH WALKER, M.D., L.D.S. Eng., <i>President.</i>	Southern Counties Branch.
F. V. RICHARDSON, L.D.S. Eng., <i>Hon. Sec.</i>	
J. J. H. SANDERS, L.D.S.I., <i>President.</i>	Western Counties Branch.
T. A. GOARD, L.D.S. Eng., <i>Hon. Sec.</i>	

ASSOCIATION INTELLIGENCE.

Representative Board.

A MEETING of the Representative Board was held at 40, Leicester Square, on Saturday, November 2, at 3 p.m., Mr. S. J. Hutchinson, President, in the chair. The following members attended:—Messrs. J. Ackery, Storer Bennett, E. G. Betts, F. Canton, W. H. Coffin, W. Hern, E. Lloyd-Williams, L. Matheson, W. B. Paterson, S. Spokes, W. H. Woodruff (London); J. J. H. Sanders (Barnstaple), Breward Neale (Birmingham), Alexander Kirby (Bedford), A. Hopewell Smith (Boston), A. A. Matthews (Bradford), G. Cunningham and R. P. Lennox (Cambridge), J. S. Amooore and W. Bowman MacLeod (Edinburgh), T. A. Goard (Exeter), Rees Price (Glasgow), J. C. Storey (Hull), I. Renshaw (Rochdale), F. Harrison (Sheffield), W. E. Harding (Shrewsbury).

The minutes of the last meeting were confirmed and signed.

Letters regretting inability to be present were received from Messrs. J. A. Biggs, G. Brunton, J. Humphreys and Dr. J. Walker.

A letter from Lady Tames, acknowledging the letter of condolence sent her on behalf of the Association, was read.

Mr. E. LLOYD-WILLIAMS, as President of the Metropolitan Branch, expressed the great satisfaction that the members of the Branch felt on learning that the next Annual General Meeting of the Association was to be held in London in August, 1896. He was authorised to say that the Branch would do all in their power to assist in making the meeting a success.

The PRESIDENT accepted Mr. Lloyd-Williams' offer with thanks, and offered a welcome to the President-elect, Mr. Canton.

Mr. J. W. Butcher, chartered accountant, was, on the motion of Mr. WOODRUFF, re-appointed Auditor to the Association.

Messrs. Ackery, Cunningham, Hern, Mummery, Hopewell Smith, and Woodruff were elected members of the Journal and Finance Committee.

In reply to Mr. Cunningham, the PRESIDENT explained that the duties of the Committee were chiefly of a financial, and not, as the name seemed to suggest, of an editorial character.

A ballot took place for the election of four members to the Business Committee, and Messrs. Ackery, Alexander Kirby, Matheson and Smith Turner were declared duly elected, Messrs. Rees Price and J. S. Amoores acting as scrutineers.

The PRESIDENT detailed the steps that the Association's solicitors were taking, in concert with the solicitors to the Treasury, in the case of "*Baron alias Bromley*"—popularly known as the "*Strand Barbers case*"—now in progress before the magistrate at Bow Street.

The following resolution, passed at the Annual General Meeting recently held in Edinburgh, was considered, viz., "That Bye-law 15, and all other Bye-laws bearing upon the same, be remitted to the Representative Board for them to communicate with the Branches and invite opinions thereon, and to report at the next Annual General Meeting."

A discussion ensued upon the terms of the communication from the Board to be addressed to the Branches.

The PRESIDENT ruled that a distinct vote must be taken upon the resolution of the General Meeting in its exact terms, and that any additional matters to be sent with the resolution to the Branches could be voted upon separately.

Mr. SPOKES moved, and Mr. HARDING seconded, that the resolution as it stood be sent to the Branches, with a request that replies might be received by the hon. secretary before March 1, 1896.

The motion was agreed to.

Mr. CUNNINGHAM, as the mover of the resolution sent down to the Board from the Annual General Meeting, considered the opinions of the Branches upon the question as of the first importance, and he proposed that the Board should from its minutes formulate the history of its previous action taken in connection with the question of altering Bye-laws 15 and 18; and that the hon. secretary be requested to forward such history to the Branches for their information only. He quoted various sections of the minutes of the Board to illustrate what he called the "*history of the movement*."

Mr. STOREY seconded the proposition.

Mr. CANTON thought that if any minutes were to go at all, then all

bearing upon the question since its inception should go, though at the same time he objected to excerpts being sent at all.

The HON. SECRETARY said that he could not, from recollection, detail the history of the question. Many hours were spent in the consideration of Bye-laws 15 and 18, with a view to alteration, both by the Board and Business Committee, and the result was *nil*, for the "previous question" was moved at the Board in 1892, and agreed to by a large majority. He asked for instructions.

Mr. LLOYD-WILLIAMS strongly deprecated any quotations or selections from their minutes being sent to Branches, and would amend or vote against the resolution.

Mr. CANTON supported Mr. Lloyd-Williams, and believed it would be better to receive the views of the Branches unbiassed by anything which had happened before.

Mr. MACLEOD considered that the branches were in need of information as to what had previously been attempted in the matter, and he approved of Mr. Cunningham's suggestion.

Mr. SPOKES supported Mr. Cunningham's motion.

Mr. BREWARD NEALE thought the branches were in need of information, but whether that proposed to be given them by Mr. Cunningham was sufficient he felt some doubt about.

Mr. REES PRICE and Mr. STORER BENNETT having spoken upon points of order in connection with the amendment of the original resolution, a vote was taken upon the resolution :—"That the letter of the hon. secretary to the branches be accompanied by excerpts from the minutes of the Representative Board as follows [excerpts specified]."

This rider was carried by 13 votes to 5.

The PRESIDENT reported that the Business Committee had received from the Scottish Branch notice of the election as a member of the Association, of a duly registered lady dentist possessing the L.D.S. Edin. diploma, and that the Committee desired to bring the matter under the cognisance of the Board.

Mr. MACLEOD, as President of the Scottish Branch, presumed that the course taken by the Branch was perfectly in order, and that the right of a Branch to elect members was not in question.

The PRESIDENT replied that the action of the Scottish Branch was not in question and quoted the opinion of the Association's solicitors to the following effect, viz., "The Interpretation Act of 1889 provides that in every Act passed after the year 1850, words importing the masculine gender shall include females, unless the contrary appears." "Under the Bye-laws of the British Dental Association ladies are not either expressly or by implication disqualified for membership, and the rule of construction above quoted may therefore be held to apply to these Bye-laws." The President thought that in welcoming Miss

Lilian Murray into the ranks of the Association (the first lady member of the British Dental Association, be it remembered) it was only right that the legality of her election should be placed on record in their minutes.

Certain disciplinary business referring to a member of the Association next engaged the attention of the Board and the meeting adjourned.

COMMITTEES AS AT PRESENT CONSTITUTED.

BUSINESS COMMITTEE.

S. J. HUTCHINSON, <i>Chairman.</i>	W. H. COFFIN.
E. G. BETTS, <i>Treasurer.</i>	H. BLANDY.
W. B. PATERSON, <i>Hon. Secretary.</i>	L. MATHESON.
W. E. HARDING.	J. ACKERY.
W. H. BREWARD NEALE.	ALEX. KIRBY.
G. CUNNINGHAM.	J. SMITH TURNER.

(*Ex-officio*) The President and President-elect of the Association, and Hon. Secretaries of Branches.

JOURNAL AND FINANCE COMMITTEE.

S. J. HUTCHINSON, <i>Chairman.</i>	W. HERN.
E. G. BETTS, <i>Treasurer.</i>	J. H. MUMMERY.
W. B. PATERSON, <i>Hon. Secretary.</i>	A. HOPEWELL SMITH.
J. ACKERY.	W. H. WOODRUFF.
G. CUNNINGHAM.	

(*Ex-officio*) The President and President-elect.

Western Counties Branch.

AN ordinary meeting of the Council of the above Branch was held at Wells, Somersetshire, on Saturday, October 19, 1895. The chair was taken by the President at 3.30 p.m. Present :—Messrs. W. A. Hunt, J. T. Browne-Mason, H. B. Mason, T. Taylor Genge, E. L. Dudley, E. Goodman, G. Thomson, S. G. Yates, E. Brown, J. Laws, and T. A. Goard.

Letters expressing regret at inability to attend were received from Messrs. R. Rogers, G. McAdam, Kendrick, Robertson and Apperly.

The minutes of the last meeting were read and confirmed. The TREASURER announced that he had no fresh report to make. It was resolved to hold the Spring Meeting at Tavistock (Devon), on or about the first Saturday in May.

A careful consideration to some cases of advertising was given by the Council during a lengthy sitting. At the conclusion of the Council meeting an informal meeting of members was held. The addition to the members of the Council present were : Messrs. W. H. Goodman and W. J. Royal.

Mr. THOMSON showed models of a deformity caused by asym-

metrical extraction of superior bicuspid; also a case of exostosis of the superior maxilla.

Mr. BROWN showed a small upper case carrying two central incisors which had been swallowed and passed per rectum after an interval of a week. No ill effects were experienced.

Mr. H. B. MASON showed a model of a very large and perfectly developed supernumerary lateral incisor.

Mr. W. J. GOODMAN showed a case of a supernumerary lateral incisor which had geminated with a temporary lateral. Also a model of a case of superior protrusion. This was interesting, because on the right side of the upper jaw a temporary canine had been retained though the patient was 27 years of age. The permanent canine had erupted posteriorly and turned on its axis. No bicuspid were present on that side. On the left side of the upper jaw, the canine was separated from the lateral by a wide interval. The second temporary molar was still in place. Another model of a canine which did not show itself until the 27th year was reached and then erupted in the palate.

The latest Hewitt's apparatus for the administration of gas and oxygen was also shown and explained.

In the evening the Members dined together at the Swan Hotel.

Southern Counties Branch.

THIS Branch held a very successful meeting at Richmond on Saturday, October 26. Amongst those present were:—Dr. Joseph Walker, President, in the chair, Messrs. J. H. Redman, H. J. Kluht, J. H. Reinhardt, Stephen Hoole and F. H. Van der Pant (London), H. Beadnell Gill (Norwood), Morgan Hughes (Croydon), Martin Henry and C. S. Reed (Folkestone), Charles Foran (Portsmouth), J. H. Whatford (Eastbourne), Arthur King (Guildford), F. R. Flintan (Weybridge), F. J. Van der Pant (Kingston-on-Thames), G. O. Richards (Richmond), W. Barton (Eastbourne), H. W. Van der Pant (Wimbledon), D. E. Caush, J. F. Rymer and F. V. Richardson (Brighton), C. E. Brown, C. Lees, E. A. Lewes, M. F. Hopson and others.

The HON. TREASURER (Mr. J. H. Redman) presented his Annual Report which was unanimously adopted.

Mr. G. O. RICHARDS, M.R.C.S., L.D.S.Eng., read a short paper on "Pyorrhœa Alveolaris," which was followed by a long and interesting discussion, in which the President and Messrs. Flintan, Reed, Gill, F. J. Van der Pant, Reinhardt and others joined.

Mr. J. F. RYMER, M.R.C.S., L.D.S.Eng., D.D.S.Phil., then started a discussion on "Rhizodontology," a subject which called forth various expressions of opinion from Messrs. Hughes, Redman, Reinhardt, Caush and others.

The members dined together afterwards, when a collection was made for the Benevolent Fund.

Midland Counties Branch.

A MEETING of this Branch was held on October 26, at Preston, but owing to pressure of space we are compelled to postpone the publication of the report until the December issue.

Metropolitan Branch.

AN ordinary meeting was held at 40, Leicester Square, W.C., on Tuesday, the 29th ult. Owing to pressure on our space we are compelled to hold over the report until the next issue.

Central Counties Branch.

The next meeting of this Branch will be held at the Birmingham Dental Hospital on Thursday, November 28, at 6.30, when Mr. J. Dencer Whittles, L.D.S.Eng., will read a paper on "Fractures of the Maxillæ."

A Council Meeting will be held at six o'clock.

7, Newhall Street,
Birmingham.

A. E. DONAGAN,
Hon. Secretary.

A NEW ALLOY CALLED "MELLOID."—It is stated in *Invention* that a new alloy has been brought out by the Phosphor Bronze Company. It has been christened "melloid," and may be described as a malleable bronze. It is a mixture of copper and tin, and is entirely free from zinc, aluminium, or iron, and differs from the usual bronzes in being both tough and ductile at all temperatures. Many descriptions of both bronze and brass may be forged or welded, but the inventor, Mr. Bull, claims that with all of them there is a temperature at which they become brittle. This may vary from 400 to 900° F., and when it is passed they again become tenacious and malleable, if their temperature be raised above the critical point.

ORIGINAL COMMUNICATION.

An Inquiry concerning the Safety and Sphere of Applicability of Chloroform in Dental Surgery.*

By FREDERIC HEWITT, M. A., M.D.Cantab.

ANÆSTHETIST TO THE LONDON HOSPITAL, CHARING CROSS HOSPITAL, AND THE DENTAL HOSPITAL OF LONDON.

I.—INTRODUCTORY AND EXPLANATORY.

MR. PRESIDENT AND GENTLEMEN,—It would be difficult to imagine a more fitting occasion than the present for the consideration of the vitally important and pressing question: Under what circumstances should chloroform be employed as an anæsthetic in dental surgery? For many years past every member of the medical and dental professions, indeed I may say every thoughtful individual throughout the civilised world, has been awaiting some authoritative statement on this subject. Although the conservative dentistry of recent years has dealt a salutary blow at the reckless removal of decayed teeth, the operation of tooth extraction is undoubtedly necessary in some millions of cases annually, and with this necessity for tooth extraction there is naturally enough a demand for the painless performance of these operations. It therefore seems to me that it is clearly the duty of the dental profession to possess some established and recognised principles for the guidance of its members in this important part of their practice. Anyone who administers a general anæsthetic for a surgical operation takes upon himself a responsibility that is too often lightly estimated. The life of the patient, for the time being, is completely delivered into his hands. Prolonged practice with the most lethal anæsthetics may give the administrator of them a kind of contempt for their dangers, but the dangers, although doubtless lessened by the capabilities of such anæsthetists, are nevertheless present. Now, with regard to the selection of appropriate anæsthetics for the comparatively trifling operation of tooth extraction, there should be absolute unanimity. There should not be those wide differences of opinion, which,

* Read at the Annual Meeting of the British Dental Association, held at Edinburgh, August, 1895.

I regret to say, at the present moment exist. Such differences of opinion are prevalent, partly because those who so often and so forcibly express their views have not taken the trouble to make themselves familiar with the mass of evidence which is available for their information, and partly because such elements as chance, local custom or prejudice, have prevented the holders of dogmatic views from making themselves familiar with the methods and practices of others.

There are several reasons for the present occasion being a particularly auspicious one for the discussion of this subject. In the first place, there can be no doubt that within the past few years we have become possessed of many fresh physiological data concerning the action of chloroform. In the next place, the columns of periodicals specially devoted to advancement in dental science have for some time past been frequently occupied by notices of deaths under chloroform, and by warning editorial articles. But the principal reason is one which I feel sure must be evident to every one present, namely, that this Association is this year in the fortunate position of holding its meeting in the birthplace and favourite residence of that very anæsthetic whose utility in dental surgery we are about to discuss. It seems to me, therefore, that this fortunate combination of circumstances must not be allowed to pass from us without our taking a full, and I hope a lasting advantage of it.

I cannot go further—indeed, I have already gone too far—without pausing to pay a full and fitting tribute to the memories of Simpson and Syme, whose doctrines in regard to chloroform administration have been and are still being disseminated throughout the medical world. We are to-day in the city in which the labours of these two illustrious men were conducted, the city which must for ever hold the most prominent position in the history and development of anæsthesia. Is it possible, I would ask, to have a better opportunity of bringing to a successful issue this vexed question? Though the teachers have passed away, their disciples are plentiful, and it is with the co-operation of these, and with the facts which are at our disposal, that we shall, I trust, be able to sift to the bottom the evidence which we collectively possess, and to state when and how chloroform should be given as an anæsthetic for dental purposes.

May I here venture to express the hope that the forthcoming discussion may prove a conspicuous exception to its innumerable predecessors. How is it, I would ask, that so little head-way has been made on previous occasions? The principal reason doubtless is that the subject of chloroform administration is one of great magnitude, admitting of consideration from a number of standpoints. But to-day we have a distinct limit to our discussion : and it is by splitting up the chloroform question, as it were, into parts, and attacking these separately, that we shall be most likely to advance our knowledge. We are about to discuss the safety and sphere of applicability of chloroform in one branch of surgery only—a branch in which there are, as a rule, certain special surroundings connected with the operation. Our remarks must be made to apply to administrators of certain experience, to subjects of certain types, to postures of a certain class—in short, to certain conditions more or less peculiar to dentistry. And our task is to inquire with the evidence before us whether chloroform can be relied upon as a suitable agent for use in dental operations.

II.—THE LINES UPON WHICH THE INQUIRY HAS BEEN CONDUCTED.

Let me now briefly explain the lines upon which the present inquiry is based. I have taken a period of fifteen years, *i.e.*, from 1880-1894 inclusive, and I have exerted every means in my power to obtain particulars of all fatalities which have occurred during this period in Great Britain in connection with the use of anæsthetics for dental operations. It seemed advisable to take a definite period of time, and I fixed this at fifteen years, partly because I have myself collected records of deaths under anæsthetics for this period, partly because within the past ten or fifteen years the records of deaths under anæsthetics have become fuller and more reliable than they formerly were, and partly because, by analysing recent cases, one is more likely to obtain additional information to that already published than when dealing with long-forgotten casualties.

I should like to take this opportunity of expressing my best thanks to those numerous correspondents who have so kindly

and straightforwardly given me particulars of cases. And I owe a very great and special debt of gratitude to Mr. J. S. Amoores, of Edinburgh, whose courteous help in obtaining additional information to that already published has been of the greatest service. I very much regret to say, however, that although by the system of inquiry which has been followed, several cases have been brought to light which were hitherto unavailable for consideration, and numerous facts in connection with already recorded cases have been elicited, there is much ground for the belief that the inquiry by no means includes *every* fatality which has occurred in Great Britain during the past fifteen years. Even in England, where coroners' inquests are invariably held when a patient dies under an anæsthetic administered for a dental operation, the facts of the case may never pass beyond the coroner's court, or the columns of some obscure local paper. But in Scotland, where coroners' inquests are unknown, a comparatively large number of cases must necessarily elude the vigilance of an inquiry such as the present. When I had satisfied myself that I had obtained as many records as time and other circumstances would permit, I proceeded to classify and analyse the cases in the manner I shall now describe.

III.—CLASSIFICATION AND ANALYSIS OF CASES.

The following table (Table I.) shows the total number of cases of which records could be obtained.

There are certain interesting points in connection with this table to which I shall now refer. In the first place, we cannot but be struck by the fact that in Great Britain no less, and in all probability considerably more than 37 persons have died in connection with the use of general anæsthetics for dental operations during the past fifteen years. In the second place, we find that out of this total of 37 fatal cases no less than 27 occurred in connection with the use of chloroform; and that if we include the chloroform-and-morphine case, the chloroform-and-ether case, and the 2 cases which arose in connection with the use of the so-called "methylen" (which experience has shown to consist largely of chloroform), we may say that of the 37 cases no less than 31 took place in association

with the use either of chloroform or some combination containing chloroform. In the third place, we note that there is only one recorded ether fatality. I have made careful inquiries as to this one case, and without entering into detail here, I may say that it should properly be excluded from the table, for not only was the patient in such a condition of health that the administration of any anæsthetic at the time was extremely hazardous, but death arose from mechanical asphyxia, principally due to a cancerous growth of the mouth, and possibly also to the entrance of blood into the larynx.

TABLE I.—DEATHS IN CONNECTION WITH GENERAL ANÆSTHETICS ADMINISTERED FOR DENTAL OPERATIONS IN GREAT BRITAIN (1880-1894, inclusive) = 37.

ANÆSTHETIC USED.	SCOTLAND.	ENGLAND AND WALES (excluding London).	LONDON.
	Approximate Population (Average between Census of 1881 and 1891) = 4 Millions.	Approximate Population (Average between Census of 1881 and of 1891) = 23½ Millions.	Approximate Population (Average between Census of 1881 and of 1891) = 4½ Millions.
Series 1. Chloroform	12	15	0
" 2. Chloroform followed by subcutaneous injection of Morphine	1	0	0
" 3. Chloroform 3 parts, Ether 1 part, in mixture	0	1	0
" 4. "Methylene"	0	2	0
" 5. Ether	0	1	0
" 6. Nitrous Oxide Gas	1	2	2
	14	21	2

In the fourth place I would remark, in connection with the nitrous oxide fatalities, that one of them occurred from the entrance of an extracted tooth into the larynx. But, as in the ether case, I have added this so that it may be said that every possible case has been included. Lastly, the numbers are of interest in their relations to the populations of the districts mentioned. We may, I think, assume that the need for tooth extraction is not greater in one place or district than in another, at all events I know nothing to disprove this assumption.

tion. Nor do I know of anything which should make painless tooth extraction more general in one part of Great Britain than in another. Moreover, there is no evidence, so far as I am aware, to prove that what we may term major dental operations, *i.e.*, operations requiring ether or chloroform anæsthesia, are more common in one place than in another. We should therefore expect, if the methods of producing anæsthesia are equally satisfactory and safe in Scotland, in England and Wales (excluding London), and in London itself, that the fatalities during the past fifteen years would bear a somewhat similar proportion between themselves as do the populations of these three arbitrarily made divisions of Great Britain. Taking an average between the census of 1881 and of 1891, I find that we may in round numbers say that the average populations during the last fifteen years were as given in Table I. Now there have been within the past fifteen years at least 14 dental anæsthetic deaths in Scotland with an approximate population of four millions; 21 in England and Wales (excluding London) with an approximate population of twenty-three and a quarter millions; and 2 in London, with an approximate population of four and a quarter millions. In other words, taking into consideration the differences between the population, there have been during the past fifteen years four times as many dental anæsthetic deaths in Scotland as in England and Wales (excluding London), and nearly eight times as many as in London.

It is clear from these considerations that there must be some very tangible cause for these great differences in the dental anæsthetic death-rates; and we are naturally led to inquire: What are the methods chiefly—I do not say exclusively used for anæsthetising in Scotland, England and Wales (excluding London), and in London itself? With regard to Scotland, there can be no doubt that chloroform is very extensively employed—not only for what we may term the major, but for the minor operations of dental surgery. Nitrous oxide is also given; but the use of this anæsthetic is apparently chiefly restricted to the larger towns. Ether is comparatively seldom used. I believe I may say, without fear of contradiction, that when several teeth have to be extracted chloroform is the routine anæsthetic. As we travel southwards we find the use of nitrous oxide and of ether more

general—the former for minor, the latter for major cases—although chloroform is still extensively employed, especially for the latter class of cases. But when we reach London we find a great change in procedure, for in this city dental operations are almost entirely conducted either under nitrous oxide or under ether, chloroform being practically never administered.

Nothing, I venture to think, could show more clearly than the above figures the lethal influence of chloroform as a dental anæsthetic. In London, where it is not used, the ratio of deaths to population is extremely small; in England and Wales (excluding London), where chloroform is used, but not to the extent which obtains in Scotland, the ratio is considerably higher; and in Scotland itself, where chloroform is the routine anæsthetic—at all events for all major dental operations—the ratio is very much higher.

We next pass to a fuller consideration of the chloroform fatalities themselves. These, 27 in number, I have arranged in two groups, viz.:—

Group 1.—Cases reported with sufficient fulness to admit of comparisons and analyses being made of them; and

Group 2.—Cases with insufficient data to admit of any such classification or analysis.

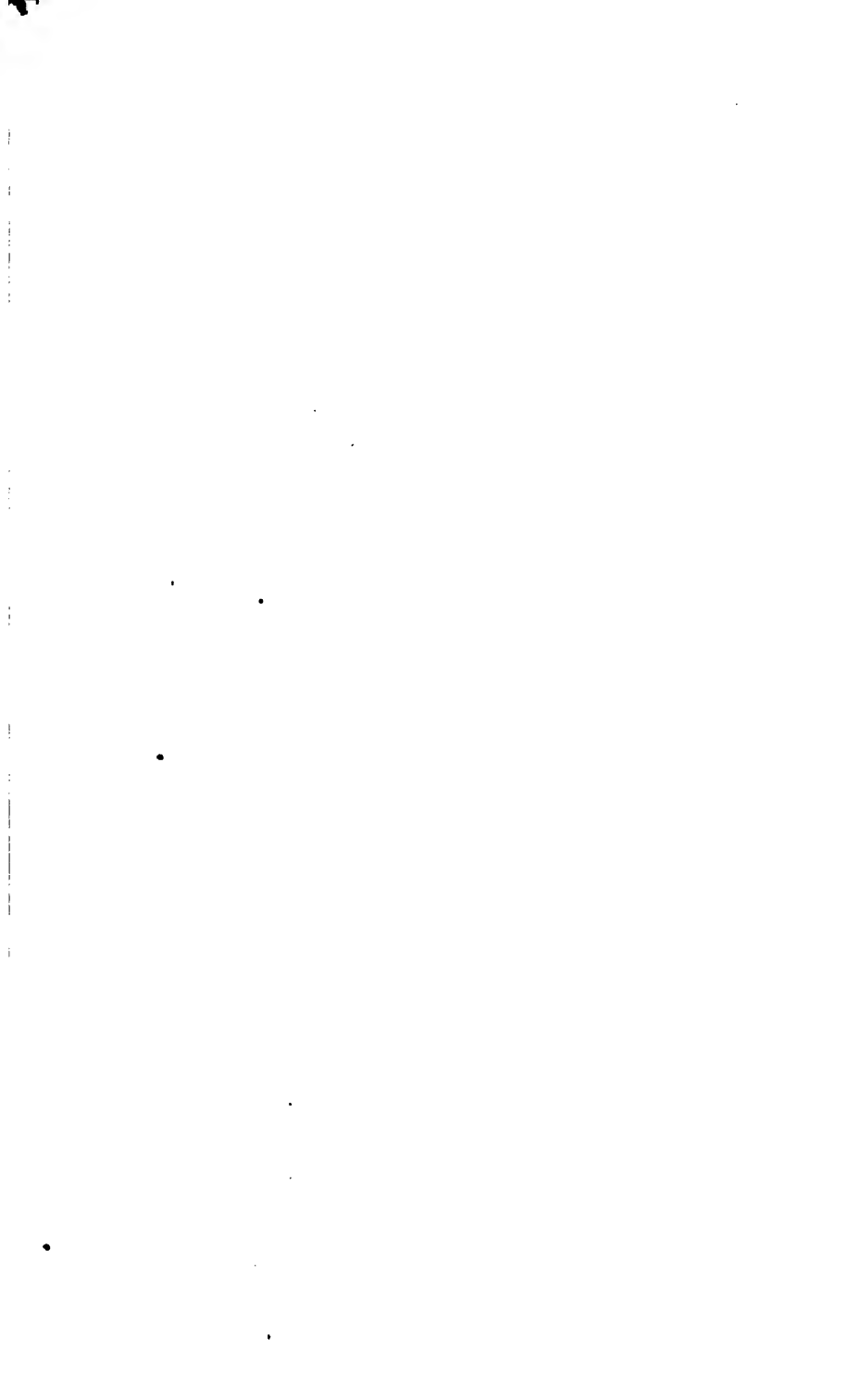
The following table (Table II.) shows the cases of Group 1. I may here mention that in drawing up this table I have adhered, as far as possible, to the words and phrases of those who have furnished the particulars.

It would serve no useful purpose to classify the cases of Group 2, eight in number, seeing that the details of them are so scanty. I may say, however, that no case has been included in this group unless it is to be found reported in one of the leading medical or dental journals, or unless I have been able to thoroughly satisfy myself, through the medium of correspondents, that it actually took place. Should any doubt exist in any one's mind as to these cases, I shall be very pleased to place my references at his disposal.

In discussing the contents of Table II., it will be as well to take the separate headings *seriatim*.

Sex.

Of the 19 cases, 5 were males and 14 females. This preponderance of female over male patients is to be ex-



Classes.	No.	Sex.	Age.	General Condition.	Preparation.
Class 1.—Cases in which the dangerous phenomena came on during a deep anaesthesia.	1	F.	21	Of a nervous temperament	Examined, and chloroform found admissible
	2	F.	About 35	Thin and spare Accustomed to faint	Clothing loose. No breakfast. Operation, 12.30 a.m.
	3	F.	About 21	"Not over-robust looking"	?
Class 2.—Cases in which the dangerous phenomena came on during a light anaesthesia.	4	F.	24	Very nervous and excitable	"Every care taken." Corsets loosened. Heart examined
	5	F.	37	Healthy looking: stout: rather nervous. Had had severe neuralgia for 2 years. Heart sounds clear. Pulse good	Corsets and clothes thoroughly loosened. Patient "examined"
	6	F.	37	Perfectly healthy	Cautioned not to take food
	7	F.	35	Extremely nervous	Dress loose. No food recently
	8	F.	Young	?	?
	9	M.	11	Fair Convalescent from measles	Solid food 4 hours before
	10	F.	16—17	Rather anæmic	?
	11	M.	36	Good Able to undergo great fatigue	"Examined," and chloroform found to be admissible
	12	F.	25	?	?
	13	F.	21	Strong: full-blooded. No history of convulsive or fainting attacks	No food for several hours
	14	M.	8—10	A fresh-coloured lad. Has bronchial catarrh in winter	Clothing loose and chest exposed
Class 3.—Cases in which it is difficult to say whether the dangerous phenomena came on during a deep or a light anaesthesia.	15	F.	17	?	?
	16	F.	21	Fairly nourished. Rather anæmic. Weak heart action	?
	17	M.	33	Active, but not strong	?
	18	M.	11	?	Prepared by diet, etc., for operation at 11 a.m. Alveolar abscess
	19	F.	?	A laundress	None. She was wearing a tightly-fitting new dress



plained by the fact, with which all dental practitioners must be familiar, that the great majority of those who require anæsthetics for dental operations are women. In ordinary surgical practice, in which men and women are operated upon with about equal frequency, there is not this preponderance of deaths amongst females; in fact, the reverse is the case, probably owing to men as a class being less susceptible to anæsthetics than women—in other words, giving more trouble during the initial stages of administration, and tending, by reason of their better developed muscular system, to become more asphyxiated from muscular spasm. Women and children are the best subjects for chloroform, and I have no hesitation in saying that if men of vigorous build constituted the majority of patients requiring anæsthetics for dental operations, the number of accidents under chloroform would be even greater than at present.

Age.

Most of the patients were young, the highest recorded age being 37, the lowest 8 to 10 years. This is again to be explained by the reasons which I have just given.

General Condition.

No description whatever is given of the patients in 4 of the 19 cases. One patient is simply described as "a barmaid." Of the remaining 14, 4 were apparently in good health, 5 were in a fair or moderate state of health, 3 were nervous and excitable, 1 was a fresh-looking lad who had bronchial catarrh in winter, and 1 was a patient who was accustomed to faint. Taken collectively, there was no case with any condition which precluded the use of an anæsthetic, or which rendered anæsthesia perilous. Experience has now convinced most thoughtful observers that the presence of a "weak heart," or, in fact, the existence of cardiac disease, in no way contra-indicates the employment of an appropriate anæsthetic. It is often the vigorous patient with good heart sounds who gives the greatest trouble, whilst the rather anæmic, fragile patient passes through artificially induced sleep with but little disturbance either of respiration or of circulation. Highly nervous and excitable subjects, however, are often difficult to manage whatever their general

physical condition may be. They "hold the breath" and half asphyxiate themselves during the process; they require larger quantities of anæsthetics than other persons, and they are more prone to muscular spasm, and hence to interferences with respiration and circulation.

Preparation.

Nothing is said as to the regulation of the diet or looseness of the attire in 9 of the 19 cases. Of the remaining 10, there is evidence of the diet having been regulated in 6 cases, and of the attire having been loosened before the administration in 5. In only 2 cases is there a note of both of these precautions having been adopted. In 1 case there is evidence that no precautions were taken at all, in fact, the patient was attired in a tightly-fitting new dress.

Posture.

In 7 of the 19 cases no mention is made of the position in which the administration was conducted; of the remaining 12 the chloroform was given—in a chair in 7, on a sofa or couch in 2, on a chair-bed in 1, on a table in 1, whilst no mention is made of either chair, couch, sofa, or table in the remaining case. Inference must not, however, be too hurriedly drawn from this classification, seeing that chairs, and especially dental chairs, may be so adjusted that the patient reclines in the semi-recumbent or possibly almost in the dorsal position; whilst a sofa or couch may be of such shape that the patient may be either in the semi-recumbent or sitting position. It is perhaps better to attempt a classification on different lines. Thus we find that in 1 case the patient was in the sitting posture; in 3 cases in the sitting or semi-recumbent posture; in 3 cases in the semi-recumbent posture; in 1 in the semi-recumbent or dorsal posture; and in 4 cases in the dorsal posture. In other words, there is evidence that the patient was either sitting or semi-recumbent in 7 of the 12 cases in which any details as to posture are given.

As will presently be pointed out, the position of the head in its relation to that of the trunk is a matter of considerable importance. In 15 of the 19 cases nothing is said with regard to this point. In 1 of the remaining 4 cases the

patient was in the dorsal posture, with both head and shoulders slightly raised; in another the patient was lying supine with a pillow under the head; and in the other 2 the shoulders were supported by pillows so that the head was extended.

The posture of a patient during the administration of chloroform for a dental operation is a matter to which attention should be carefully directed. Most medical and dental practitioners are aware of the influence which a more or less vertical position of the body may exert upon the circulation—effects which are directly dependent upon the force of gravity. But there would appear to be comparatively few who fully realise the fact that in dental operations generally, and more particularly in dental operations under chloroform, the circumstances which usually attend the administration of the anæsthetic are very favourable to the occurrence of arrested breathing. There has been a gradual and satisfactory tendency during recent years to more carefully consider the conditions which may interfere with free respiration during anæsthesia; and amongst these conditions certain postures of the body, and especially of the head with regard to the body, should occupy a prominent place. Before we discuss, however, what may be termed the respiratory side of the subject, it will be well to say something as to the effects of posture upon the circulation.

A very complete research by Dr. Leonard Hill, communicated not long ago to the Royal Society, is of importance in this connection. Dr. Hill finds the circulation in the lower animals to be directly influenced by the force of gravity, the arterial tension in the carotid arteries rising in the feet-up, and falling in the feet-down posture. He further finds that the splanchnic vaso-motor mechanism, which regulates the quantity of blood in the splanchnic area, compensates for these changes in the tension of the carotids, and that, when the mechanism is intact, and the heart is acting efficiently, raising the trunk and lowering the feet has no dangerous effect upon the circulation, for by the constricting action of the splanchnic mechanism blood is prevented from accumulating in the splanchnic area, and the heart, and therefore the carotids and brain, are kept properly supplied. But if the splanchnic vaso-motor mechanism be damaged—as, for example, by the

use of large quantities of chloroform, by asphyxia, or by other causes—an alarming and perhaps fatal attack of syncope may attend elevation of the trunk, for the splanchnic area is full of blood, and the arterial system is comparatively empty. Dr. Hill lays stress, too, on the fact that if the heart's action has become depressed from an over-dose of chloroform or other causes, this elevation of the trunk will be even more liable to end disastrously. This valuable research appears to me to be quite in harmony with what we find in practice. So long as the colour and pulse of a patient under chloroform are satisfactory, in other words, so long as the anæsthetic has not been pushed sufficiently far to cause a dangerous fall of arterial tension, to interfere with the compensatory power of the splanchnic mechanism, or to seriously enfeeble the heart's action, the semi-recumbent or sitting posture is probably attended by little or no risk. But should the patient's circulation be extremely feeble (from nervous apprehension, functional or organic heart disease, anæmia, &c.), before the administration, or should it become greatly depressed (from the use of too small or of too large quantities of the anæsthetic, from vomiting, from asphyxial complications, or from surgical shock) during the administration, any elevation of the trunk from the horizontal plane may certainly be fraught with considerable danger.

We next come to the consideration of the question: How may the postures customarily adopted for dental operations under chloroform directly interfere with respiration?

Extension of the Head and Neck.—It is a common practice in dental surgery for the head to be thrown well backwards upon the trunk, in order to allow of the extraction of upper teeth. This procedure, however, has the effect of bringing the base of the tongue and epiglottis away from the pharynx and larynx respectively, so that the act of swallowing is rendered difficult or impossible. Anyone may satisfy himself with regard to this point by making the experiment upon his own person. The act of swallowing is of importance in connection with the administration of anæsthetics; for it has the double effect of temporarily closing the larynx against an irritant, and of carrying away solid or liquid substances from dangerous proximity to the laryngeal aperture. There is, moreover, in dental operations under chloroform a great

tendency for the act of deglutition to arise. In the first place, the anæsthesia is usually not very profound, owing to the operation interfering with continuous administration. In the second place, blood, saliva, mucus, and possibly fragments of teeth are generally present as exciting causes. And, in the third place, the position of the patient is such that these substances tend to gravitate towards the back of the throat. From these considerations it will therefore be clear that the extension of the head and neck to which I have referred is liable, more especially when the patient is not deeply anæsthetised, to lead to symptoms of laryngeal irritation, spasm, and laryngeal closure—in other words, to asphyxial phenomena capable of complicating in no minor degree the usual course of chloroform anæsthesia. I can imagine nothing more likely to bring about asphyxial complications under chloroform than placing a patient in a semi-recumbent posture upon a sofa, the head being well extended over the sloping end. When extension of the head and neck is practised during *deep* anæsthesia another danger comes into operation, viz., that of foreign substances actually entering the now insensitive, open, and unprotected larynx.

Flexion of the Head upon the Sternum. Opening the Mouth very widely by means of Props or Gags.—By placing one or more pillows under the head, without raising the shoulders, the tongue will tend to touch the pharyngeal wall, and the breathing may thus become impeded, stertor passing into complete obstruction. This was pointed out by Bowles. A similar state of things may arise during the extraction of lower teeth, respiration completely ceasing so long as the lower jaw is driven down towards the sternum. Again, if the mouth be opened very widely by a prop or gag, respiration will be liable to become arrested when the patient is anæsthetised, the depression of the lower jaw having the same effect in approximating the tongue to the pharynx as when the whole head is flexed by means of pillows.

In the semi-recumbent and dorsal postures the tongue may, during properly established anæsthesia, gravitate towards the pharyngeal wall and obstruct breathing. I have frequently demonstrated at the Dental Hospital the great difference, in regard to the occurrence of obstructive stertor, between a nearly vertical posture and a position approaching the semi-

recumbent—the latter being a very favourite one for dental operations. I am now speaking of nitrous oxide cases, but the remarks apply to chloroform. When the body and head are nearly vertical the tongue rests on the floor of the mouth, and obstructive stertor is not likely to arise. When the body and head are thrown more backwards, as they almost invariably are when chloroform is about to be given, tongue-stertor is far more likely to arise, and respiration to become embarrassed from this cause.

Method of Administration and Quantity of Chloroform used.

In 5 of the 19 cases no particulars are obtainable concerning the method adopted or the quantity of chloroform used. The method is referred to in 13 cases. In 3 of these a Skinner's mask was employed; in 2 a folded napkin: in 2 a piece of lint; in 2 a "napkin" (? folded or not); in 1 a towel; in 1 an "open inhaler"; in 1 a Junker's apparatus; and in 1 it is stated that the chloroform was administered "in the usual way." The quantity of chloroform used is given in 6 of the cases. The smallest quantity was half a drachm; the largest was a little over 2 drachms. If we take "a little over"—an expression used in 2 of the cases—to mean 20 minims, and if we reckon 45 minims to have been employed in the case in which "40 to 50 minims" is mentioned, the average quantity of chloroform used in these 6 fatal cases, works out at about $2\frac{1}{2}$ drachms. Special reference will subsequently be made to the 2 remarkable cases in which only 30 minims, and 40 to 50 minims respectively were employed.

Nature of Operation.

The proposed operation is not stated in 5 of the 19 cases; in 1 it is said that a "large number of roots" had to be removed; in 4 cases "several teeth" are referred to; in 1 case eighteen roots had to be extracted; in 2 cases nine teeth; in 2 cases six teeth; in 1 case the roots of one tooth and then two entire teeth: in 1 case three teeth; in 1 case one tooth and one stump; and in 1 case one tooth only.

Relation of Dangerous Symptoms to Operation.

In 3 cases the dangerous symptoms arose before the operation; in 8, during; in 2, during or after; in 5, after;

and in 1 it is impossible to say at what juncture they occurred.

Phenomena during Administration and Operation. Fatal Phenomena.

There are so many possible sources of fallacy in analysing and classifying the phenomena recorded in fatal cases of chloroform administration that too much reliance must not be placed upon the results obtained. The occurrence of dangerous symptoms during the administration of an anæsthetic for the comparatively minor operation of tooth extraction is usually so disturbing that a clear and systematic statement is next to impossible. Moreover, even at the best of times, it is an easy matter to be deceived as to the state of a patient's circulation or respiration at any particular moment.

For example, breathing may so noiselessly and insidiously cease that the cessation may readily escape detection, the more so as thoracic and abdominal movements may continue even when there is complete obstruction to the entry and exit of air to and from the chest. When respiration ceases from spasm of thoracic and abdominal muscles, or from paralysis of the respiratory centres, these deceptive movements of the chest and abdomen do not occur, and so cannot mislead; but seeing that of all the causes of respiratory arrest, mechanical obstruction within the air-tract is by far the most frequent, we must ever be on our guard against the fallacious continuance of respiratory movements. Those who rely upon visible respiratory action as indicating respiration are very likely to be deceived. Then, again, it is not a difficult matter to be misled in the opposite direction, and to regard the breathing as having ceased, when in reality it is proceeding. Sometimes, after exaggerated respiration, and more particularly when a patient is emerging from anæsthesia, the breathing may be so calm and inaudible that an inexperienced observer may readily believe it to have come to a standstill. Furthermore, with regard to the detection of circulatory changes, it is not always an easy matter to say what the state of the pulse is at any particular juncture. The radial and temporal arteries are often indistinctly palpable in health, and abnormal distributions are not uncommon, so that the administrator who has not felt the pulse beforehand may easily put an erroneous interpretation on symptoms. In addition to this, the temporal pulse often becomes difficult to feel under

chloroform without there being any cause for anxiety. For these and many other reasons there is a great chance of errors arising in the observations by the operator or anæsthetist.

There are several ways in which we may consider and compare the phenomena of the 19 fatal cases. With the object of directing attention to the different depths or degrees of anæsthesia at which the fatal symptoms arose, I have divided the cases into the three classes given in Table II.

Class 1.—In this class the cases are remarkably similar in many respects. The patients were all females, and none of them were in the best state of health. Such patients are usually rather susceptible than otherwise to the influence of anæsthetics, and do not exhibit that tendency to "struggle" and to muscular spasm which so often characterises chloroform administration in the case of vigorous men and of alcoholic subjects. In all 3 cases numerous teeth had to be removed—a fact which probably led the administrator to push the chloroform rather freely. In 2 of the cases chloroform was given on a napkin; in the other case the method is not stated. No quantities are recorded. In 2 cases the operation took place at about 11.30 in the morning, and in 1 of these it is stated that the patient, who was accustomed to faint, had had no breakfast. Another interesting point in connection with the latter case is the absence of hæmorrhage during the operation. In 1 of the cases a cushion was placed under the shoulders, and this circumstance, taken with the fact that a re-administration was necessary, probably added an intercurrent element of asphyxia to the administration. In all 3 cases the first alarming symptom which was observed was pallor—a point of interest and importance, and one which deserves special notice.

When chloroform is administered in toxic quantities there can be no doubt, as physiologists have repeatedly demonstrated, that respiration stops before the heart finally ceases to beat. One of the greatest errors which has been committed in connection with the chloroform controversy is to regard this teaching as irreconcilable with the often-recorded statement that in a particular case the pulse stopped before the breathing. The apparently missing link in the chain is to be found in the fact that, when chloroform is administered in toxic doses, it produces such a fall of arterial pressure, and

such a weakening of the heart's action, that a juncture may arise at which pallor and failure of pulse occur, although the action of the heart and respiration are still proceeding; respiration then ceases, and finally the heart's action stops. The pallor and pulse-feebleness indicate that, from a clinical point of view, the circulation is failing or has failed. I do not mean to say that there are no cases in which, when chloroform is given in toxic doses, respiration ceases before the pulse fails. Such cases, no doubt, do occur. But the point is, that in chloroform poisoning the circulatory phenomena are quite as conspicuous as, if not more conspicuous than, the respiratory, although physiologically it is true that respiration ceases before the heart. The fact that the heart is still feebly beating when respiration ceases is not of much importance if we cannot restore the failing circulation. As I have elsewhere pointed out, patients usually die from chloroform because the circulation cannot be restored.

Whilst there seems considerable probability that in the above 3 cases death arose from the administration of a quantity of chloroform which was, in these particular cases, lethal, it is only right to point out that there is another explanation which is possible. In all of these cases the fatal symptoms came on *during* the operation. Now, I have myself seen more than one instance—not in dental, but in other practice—in which very alarming, though fortunately not fatal symptoms, arose from surgical shock during perfectly established anæsthesia. The symptoms were so similar to those of an over-dose of chloroform that, had there not been corroborative evidence as to their true nature, I should certainly have been misled. I do not think that this explanation is the correct one for the cases now before us, partly because physiological experiments have shown that fatal surgical shock cannot be produced by ordinary surgical operations upon the lower animals under chloroform, and partly because, although I have seen several cases of surgical shock, I have not witnessed a fatality. I am, of course, putting out of the question cases of sudden and uncontrollable hæmorrhage, and formidable operations upon exhausted and almost moribund subjects. It is possible, however, that under certain circumstances a fatal event might occur from a simple dental operation, so that we must not entirely ignore this view.

Class 2.—In the cases of this class there is distinct evidence to show that the fatal phenomena arose in association with a light chloroform anæsthesia. This is an extremely important matter. We can readily understand that in a considerable proportion of cases in which chloroform is used, the boundary of safety may readily be over-stepped—in other words, that more of the anæsthetic than is safe in the particular case may be administered. There are, in the preceding class, 3 cases in which this probably occurred. But it is not at first sight easy to explain the fact that out of the 19 fatalities of Table II., more than one half undoubtedly took place in association with the administration of too little rather than too much of the anæsthetic. I have classified these light-anæsthesia cases together in order to bring them collectively into prominence. It is a well known clinical fact that a light chloroform anæsthesia is dangerous, but the danger is usually regarded as arising from reflex cardiac inhibition during the performance of the operation. It is taught that the heart's action is specially liable to be reflexly depressed, or even arrested, when dental operations are performed during light anæsthesia. But supposing that this theory is a correct one, it is not possible to explain more than 4 or 5 of the 11 cases upon these grounds for the following reasons.

There are only 4 cases (Nos. 7, 8, 9, 10) in which the fatal symptoms undoubtedly arose *during* the operation, and 1 (No. 11) in which they arose *during* or *after*. Of the remaining 6 cases, there are 3 (Nos. 4, 5 and 6) in which the fatal phenomena arose *before* the operation began, and 3 (Nos. 12, 13 and 14) in which they appeared *after* the operation.

Let us first of all consider Cases 4, 5 and 6, in all of which the patients, who were lightly anæsthetised, died before the operation was begun.

Case 4 is an extremely difficult case to understand, and therefore to classify. We cannot be even moderately certain as to the immediate cause of death. The patient was very nervous and excitable, and from the available details it would seem that she died remarkably suddenly, so suddenly indeed as to suggest primary syncope arising from profound mental disturbance. But the one great objection to regarding early chloroform deaths as entirely due to fright is that such deaths

do not occur in connection with the use of nitrous oxide or of ether, as we should certainly expect to be the case if this theory were correct. There is no reason why patients who are about to have teeth extracted should be more alarmed before chloroform is given than before other anæsthetics are used; so that if we consider mental disturbance to be in any way answerable for death at the outset of chloroform administration, we must suppose that the circulation of the patient, owing to the action of the chloroform, is not in such a satisfactory state to withstand these disturbances as when either nitrous oxide or ether is given. Some have urged that chloroform vapour may, by its local action upon nerve endings within the air passages, reflexly inhibit the action of the heart, but there is little to support this theory, more especially in such cases as the present, in which only from 40 to 50 minims of the anæsthetic had been given upon lint, so that a very concentrated vapour could hardly have been present. There is, however, another way in which syncope may ensue early in chloroform administration, not quite so early perhaps as in the present case. When chloroform is administered in very small quantities at a time, as I have often seen it administered, a highly unsatisfactory state of affairs results. I believe Syme's dictum was that "drachms may save whilst drops may kill," and there is a good deal of truth in this remark. When chloroform is given in too small quantities at a time, and delay arises in producing surgical anæsthesia, the circulation will often show signs of running down. Pallor, feeble pulse, shallow and almost imperceptible breathing will arise. An experienced administrator, taking in hand such a case at such a crisis, would add half a drachm, a drachm, or even more of the anæsthetic to the lint, and apply the latter more closely to the face, with the result that respiration would quickly increase in force, and in a short time good anæsthesia would result. But with opposite treatment the circulation may become so feeble that the pulse may disappear altogether, and although I cannot speak positively, it would seem probable that a fatal event might thus occur. Now, we do not yet understand the immediate cause of this condition. We know that the act of vomiting is often attended by cardiac depression, and we know, moreover, that vomiting is very liable indeed to be connected with lightly established anæsthesia.

It is hence possible that, in some of these cases, the symptoms of faintness may have been connected with the actual or suppressed vomiting to which imperfect anæsthesia leads. Whether there is any real danger in depression of the circulation dependent upon the too sparing use of chloroform, or whether some otherwise trifling impairment of breathing from half performed deglutition, the act of vomiting, or other causes, is essential in order to add the last straw, and to finally upset the circulatory balance, we do not yet know. It is, however, certain that in the case of nitrous oxide and of ether, patients must occasionally pass through similarly light states of anæsthesia, and yet they do not die. The probable explanation of this great and important difference is that, in the case of nitrous oxide and of ether, there is not nearly that fall of blood pressure which is admittedly met with under chloroform, so that circulatory failure is not nearly so common.

I have introduced the above remarks on the dangers of light chloroform anæsthesia, not because they necessarily apply to the case before us, but in order that they may act as a kind of introduction to the cases about to follow.

With regard to the present case, it is, of course, quite possible that the patient may have fallen a victim to the too cautious method. This we cannot tell. The fact that death took place with such suddenness is rather suggestive of some other cause or causes. There are one or two facts which seem to indicate that there was, at all events, a spasmodic muscular factor in the case, for we are told that the head dropped forwards. Now, with a patient semi-recumbent in an arm-chair, with the head thrown backwards, any forward movement must have been due to muscular spasm. With this point before us, it is quite possible that the patient, being of an exceedingly nervous temperament, displayed more symptoms of muscular excitement than usual, and that the extended position of the head upon the body during incipient anæsthesia led to asphyxia, which was overlooked. The forward movement of the head and body would then be intelligible—it would indicate the occurrence of muscular spasm, so common when the air supply is interfered with or completely cut off.

If one may venture upon an explanation of the case, the most probable one appears to me to be that the patient's

circulation was primarily enfeebled, partly from extreme nervousness and apprehension, partly from a more or less vertical posture, and partly from a sparing administration of chloroform, and that a very slight additional strain upon the heart was all that was needed to upset the balance. This additional factor was furnished by arrested breathing, dependent either upon the posture, or impending vomiting—or both—in other words asphyxial syncope resulted, the already depressed heart failing by reason of the extra strain imposed upon its right side during the respiratory embarrassment.

Case 5 has many points in common with Case 4. It will be observed that respiration was "free and easy" at first; that pulse-failure was then noted; that a slight epileptiform seizure next occurred; that the heart failed; and that "respiratory movements continued." In a fuller account of the case, it is stated that the respiratory movements were aided by artificial respiration. The slight epileptiform seizure is strongly suggestive of an asphyxial state. Moreover, the statement that respiratory movements continued, and that they had to be assisted by artificial means, is corroborative of this view. In all probability the case was one of asphyxial syncope. A stout patient who is partially anaesthetised by chloroform whilst in the semi-recumbent posture with the head in the mid-line is very liable indeed to display asphyxial phenomena, and the more or less vertical posture of the body, coupled with the slow administration of chloroform, might, as already explained, favour syncope during the asphyxial condition.

Of Case 6 there are two distinct versions, both coming from witnesses of the fatal seizure, and exemplifying the difficulty to which I have already alluded, of forming a correct estimate of symptoms on such occasions. According to the first statement, the case was one in which the circulation primarily failed, respiration apparently not being interfered with. But the second statement is strongly suggestive of respiration having been primarily involved. The latter version is probably the more correct. A prolonged stage of struggling under chloroform has in numerous instances ended in syncope, the cause of the syncope being asphyxia, and the cause of the asphyxia being spasm of muscles

directly or indirectly concerned in respiration. The word "struggling" is rather a misnomer for such cases as these, as the muscular phenomena, leading to the suspended breathing, arise when the patient has lost all volition.

It may be well here to draw attention to the fact that the sudden pallor which is so often described in chloroform accidents is not necessarily associated with primary circulatory depression; for it may attend asphyxial conditions, more especially when, as is often the case with chloroform, the arterial tension is low, and the arterial system comparatively empty. As I have pointed out, suspended breathing may readily be overlooked; and if the observer is watching the colour, pallor rather than cyanosis may be the first sign to attract his attention. Cyanosis seems to be more common when respiration ceases at a moment at which the arterial system is comparatively full of blood.

We next come to the consideration of Cases 7, 8, 9 and 10, in all of which the fatal phenomena arose in association with a light anæsthesia, and during the operation.

Of Case 7 the most probable explanation appears to be that asphyxia was induced, partly by muscular spasm incidental to a light anæsthesia in a highly nervous patient, to posture, and to the presence of blood. As in several other cases, it is difficult to be certain, but the fact that the patient did not actually die for about five minutes after the commencement of the symptoms, seems to render the alternative explanations (death from fright, surgical shock, or some similar cause) less feasible than that suggested.

In Case 8 the symptoms were similar to those in Case 7, and to it similar remarks may be applied. From the *post-mortem* account, it would appear that the patient had damaged lungs, a condition which in all probability favoured the occurrence of asphyxia for the causes mentioned, and one which helps to explain the comparatively rapid onset of the fatal phenomena.

Case 9 is a remarkable one, and very difficult to classify. The accounts given of it are so circumstantial and full that they certainly seem to leave but one explanation for the fatal event, viz., surgical shock. The patient was at the time lightly anæsthetised. As I have attempted to point out above, symptoms of shock may occur during well

established anæsthesia. But whether such symptoms are more likely to arise during imperfect anæsthesia; whether they are more common under chloroform than under nitrous oxide or ether; and in what proportion of cases surgical shock during partial or complete anæsthesia is actually answerable for finally arresting the heart; are matters still *sub judice*. If there were any grave risk of performing dental operations during a light anæsthesia we should expect a considerable proportion of those who sit down in dentists' chairs to have nitrous oxide administered to them never to regain consciousness. But this is not so; it is quite possible, and some believe certain, that a light chloroform anæsthesia is hazardous; and if so this is one great disadvantage of this particular agent. For my own part, as I have seen rather alarming surgical shock during well-established ether anæsthesia, and very alarming surgical shock during a similar state under chloroform, and as, to my knowledge, thousands of cases are annually operated upon when only partially anæsthetised, I still preserve an open mind on this important question. With regard to the present case, it is just possible that overlooked asphyxia may have contributed to the fatal event, the bluish pallor, and the fact that there was a re-administration of chloroform rather favouring this hypothesis. But it must be admitted, as the case stands, that it reads as if surgical shock were the principal, if not the sole factor.

With regard to Case 10, I am able to speak with somewhat greater certainty than in most of the others, for I have personally interviewed the operator. There can be no doubt that the death was asphyxial, the posture adopted, the presence of spasm from imperfect anæsthesia, the re-administration of the anæsthetic, and the presence of blood, combining to produce an opisthotonic state and fatal asphyxia.

There is one case (Case 11) in which it is uncertain whether the fatal symptoms arose during or after the operation. From the considerations that artificial respiration was unsuccessful in effecting an entry or exit of air to or from the chest, that muscular spasm from imperfect anæsthesia was undoubtedly present, that blood was free in the oral cavity, and that probably the posture was an unfavourable one, it is pretty certain that asphyxia resulted.

Our next step is to consider those light-anæsthesia cases in which the fatal phenomena arose after the operation.

Case 12 is another remarkable one; and it is difficult to say in what way death occurred. We may put the question of simple over-dose on one side, owing to the fact that the conjunctiva had become sensitive to touch. From the account before us, the most likely theory would appear to be that primary syncope took place. But why should such syncope have arisen? The patient had been properly anæsthetised, the operation had been performed without any evidence of shock, and too much chloroform had not been administered. We have already discussed at some length the circumstances under which the circulation may become depressed during the induction of chloroform anæsthesia; and when persons are emerging from this state very similar circumstances may be present. For example, there is a tendency to the act of vomiting, and with this tendency the circulation may become feeble, more especially if the patient be semi-recumbent or sitting. The slight obstruction to the breathing incidental to the act of vomiting may be quite sufficient, as has been pointed out, to set up alarming symptoms, unless the air-way be quickly re-established by appropriate measures. Whether this was the explanation of the fatal event in Case 12 it is difficult to say, but it seems to me the most probable. At all events, it is likely that there was some asphyxial factor in the case. Possibly this may have been contributed by the posture adopted. Curiously enough, the patient had been successfully anæsthetised under almost exactly similar circumstances shortly before, but on that occasion she was more vertically placed. We are therefore led to ask: Was the semi-recumbent posture in any way answerable for the phenomena? It is certain that this posture is more likely to induce asphyxial symptoms than the sitting position, owing to the tongue gravitating towards the pharyngeal wall, and to blood, mucus, &c., flowing backward rather than to the floor of the mouth. We may say that in whatever way the air-tract becomes obstructed during recovery from chloroform anæsthesia, the low arterial tension, combined with a more or less vertical posture, may readily allow of asphyxial syncope arising.

In Case 13 we have a most typical example of asphyxia

due to a combination of certain causes. The patient was lying on a sofa (probably with the head in the mid-line and extended, as the operation was upon the upper jaw); the effects of the anæsthetic were passing off, and the patient was regaining muscular power; blood was present in the mouth; and the circulation at the time was laden with chloroform. With such a combination of circumstances it is easy to understand, from what has been already said, that asphyxia supervened, as evidenced by the arrest of breathing, the convulsive seizure described, and the *post-mortem* record.

Case 14 is very similar in many of its features to Case 12, and probably admits of similar explanation, viz., asphyxial syncope. The boy was undoubtedly only partially anæsthetised during the operation; but no alarming symptoms were then observed, they came on several minutes after. The most likely explanation is that after the operation was over, and the patient had been left for a few moments, respiration noiselessly ceased (possibly from arrested deglutition, or possibly in connection with impending vomiting), and that the circulation failed, the pallor having really been the expression of cardiac failure secondary to obstructed breathing.

Class 3.—In the 5 cases of this class the evidence is insufficient for us to say whether, at the moment of onset of fatal symptoms, the patients were deeply or lightly anæsthetised.

With regard to any influence the operation may or may not have had, it will be seen that in the first of the cases (Case 15) the fatal phenomena arose during the operation; in the second (Case 16) during or after; in the third and fourth (Cases 17 and 18) after; and in the last (Case 19) details as to this point are not available.

In Case 15 the patient was first of all placed well under chloroform, then some recovery ensued, and a re-administration was necessary. This apparently led to asphyxial phenomena.

Very considerable skill and judgment are needed in re-administering chloroform in mouth operations when the patient is showing signs of coming out of the anæsthesia. The presence of blood within the oral cavity sets up arrested swallowing and "holding the breath," the jaws tend to become clenched, and general muscular spasm arises. Apart from the introduction of any more anæsthetic, this state may

be dangerous, in conjunction with the chloroform already present, unless the breathing be re-established by proper measures; but the danger is greatly increased by re-administration, which of itself tends to augment asphyxia, and also to introduce more anæsthetic. At such junctures as these, very little chloroform indeed is needed in order to place the patient again well under the anæsthetic. It is not usually the quantity of blood which causes the asphyxia; it is rather its presence which leads to imperfectly performed swallowing (*i.e.*, to arrested breathing) and laryngeal irritation. Amongst the 19 fatal cases there are no less than 6 (*viz.*, Nos. 2, 9, 10, 15, 16, and 18) in which chloroform was re-administered during the operation—a fact which corroborates the opinion that this re-administration in dental surgery is hazardous unless skilfully conducted. It is probable that of the remaining 13 cases, the anæsthetic was re-administered in several other instances, but this is merely conjecture. Of these 13 cases, no note is made as to re-administration in 5 (Nos. 8, 11, 14, 17 and 19), although such re-administration may have taken place; and there was no re-administration in 8 cases (Nos. 1, 3, 4, 5, 6, 7, 12 and 13).

Case 16 is remarkably similar to Case 15, and similar remarks may be applied to it.

Case 17 resembles Case 14 (the last of Class 2) and is to be explained in a similar manner. It is possible, however, that instead of the patient having died from asphyxial syncope, he succumbed to an over-dose of chloroform, which explanation can hardly be accepted with regard to Case 14.

In Case 18, although the depth of anæsthesia, when alarming symptoms arose, is not stated, it is in the highest degree probable that the re-administration of chloroform, the risks of which have already been mentioned, led to a dangerously deep anæsthesia, and that the case should be placed in Class 1. But owing to want of evidence I have not thought it right to do this. In this case the sitting posture possibly contributed to the fatality.

Case 19 is so briefly reported that it is impossible to hazard a conjecture as to how death took place. My only object in placing it in Group 2 is to direct attention to the fact that the patient was attired in a tightly fitting dress at the time, which probably aided largely in bringing about a fatal issue.

Post-Mortem.

Nothing is said as to any *post-mortem* having been performed in 8 of the cases. In 4 it is stated that no autopsy was made. In the remaining 7 cases the particulars obtainable are so imperfect and meagre that no useful purpose would be served in classifying them. In one case the organs were all healthy; in another the heart and lungs were healthy. Although in the remaining cases various pathological states are described, there is nothing mentioned which would specially have contra-indicated the use of chloroform. I have already referred, when discussing Case 8, to the influence which the lung affection probably had in determining the fatal event. The congested state of the organs in Case 13 is quite in accordance with the view advanced as to the cause of death, viz., asphyxia. The "flabby, rather dilated heart" of one case, and the pale flabby and fatty heart of another, are noteworthy. From the fact that, speaking generally, patients with heart disease do remarkably well under anæsthetics, always provided that appropriate agents are chosen and that care is exercised, and that patients with the strongest and most healthy hearts may quickly fall victims to chloroform when improperly given, too much stress must not be laid upon the discovery of these minor cardiac affections at the *post-mortem*.

IV.—THE PROBABLE MODES OF DEATH IN THE NINETEEN CASES OF GROUP 2.

From the foregoing remark upon the recorded phenomena it will be found that of the 19 cases there are 8 in which we may be practically certain as to the mode of death, 10 in which the mode of death is uncertain, although in each case the balance of evidence is rather in favour of this or that cause, and 1 about which no opinion can be expressed.

The 8 cases in which there is apparently no doubt as to the cause of death are Nos. 7, 10, 11, 13, 14, 15, 16 and 18, and in all of these the patients died from asphyxia or asphyxial syncope, either connected with muscular spasm incidental to light anæsthesia, the posture adopted, a re-administration of chloroform, or the presence of blood within

the mouth. In 5 of these 8 cases there is evidence that the patients were lightly under the anæsthetic when the fatal symptoms arose, no definite evidence upon this point being obtainable in the other 3 cases.

The 10 cases in which one cannot express a definite opinion as to the mode of death are Nos. 1, 2, 3, 4, 5, 6, 8, 9, 12 and 17. In 3 of these (Cases 1, 2 and 3) the fatal phenomena were probably due to an over-dose of chloroform, though the possibility of reflex cardiac inhibition must not be completely laid aside. In 2 (Cases 4 and 5) they were apparently either due to asphyxial syncope, to syncope in connection with vomiting, or to the effect of chloroform acting upon a circulation already depressed by mental disturbances. In 1 (Case 6) they were probably due to asphyxia connected with so-called "struggling." In 1 (Case 8) they were probably due either to asphyxia from "struggling," and the presence of blood (the patient having lung disease), to surgical shock, or fright. In 1 (Case 9) they were apparently either due to surgical shock or to asphyxia from the combined effects of re-administration, blood in the mouth, and muscular spasm. In the remaining 2 cases (Cases 12 and 17) they were probably due to asphyxial syncope after operation, the asphyxial factor being consequent upon impeded breathing from muscular spasm, posture, the presence of blood, partially performed deglutition, or incipient vomiting, syncope following, owing to the circulation not being able to hold out against embarrassed respiration.

V.—GENERAL SUMMARY, REMARKS, AND CONCLUSIONS.

Is Chloroform a safe Anæsthetic in Dental Surgery?

The first consideration which should engage the attention of any one about to administer an anæsthetic is the safety of his patient during the administration. Now, in the course of this inquiry we have seen: (1) That during the past fifteen years a very large number of fatalities have occurred in Great Britain in connection with the use of chloroform for dental operations—so many, indeed, that from this point of view alone chloroform cannot be regarded as a safe anæsthetic. But in addition to this fact we find: (2) that in Scotland, where chloroform is very commonly used in dental practice,

the ratio between the fifteen years' dental anæsthetic fatalities and the population is about four times higher than the ratio for England and Wales, excluding London, in which countries chloroform is less commonly used for dental anæsthetic purposes than in Scotland, and about eight times higher than the ratio for London, in which city chloroform is practically never used in this branch of surgery. These considerations, then, amply justify the opinion, which has been so often expressed elsewhere by competent authorities, that chloroform cannot be regarded as a safe anæsthetic in dental surgery.

It may be asked: What are the objections to chloroform? In reply to this question the following may be stated:

(1) As the circumstances under which dental operations are performed usually preclude the adoption of those preparations and precautions which are customary when chloroform is administered for other surgical operations, the risks ordinarily attendant upon the use of this anæsthetic must obviously be increased.

It may be urged, in regard to this statement, that by adopting certain precautions, by observing certain symptoms, and by conducting the administration in this or that way, these chloroform accidents will not occur. But we have to deal with the present state of things in dental practice, and to that state of things our remarks must be restricted.

(2) The postures which are most convenient for the performance of dental operations happen to be the worst, so far as the administration of chloroform is concerned.

The sitting and semi-recumbent postures are open to the objection that they may prejudicially affect circulation. The semi-recumbent posture, moreover, allows of the tongue, blood, mucus, saliva, and possibly fragments of teeth, gravitating towards the back of the throat.

Extension of the head upon the body has the double disadvantage of preventing swallowing and of removing the epiglottis from the laryngeal aperture, thus rendering this aperture liable to be invaded by foreign substances.

The prevention of swallowing may lead to trouble during light anæsthesia because the larynx cannot be closed by the epiglottis, and signs of laryngeal irritation and spasm are prone to arise should mucus, saliva, or blood be present;

and the removal of the epiglottis from the laryngeal aperture is an evil during deep anæsthesia in mouth operations, because foreign substances may then enter the insensitive and unprotected larynx.

Flexion of the head upon the body—which is often present during the extraction of lower teeth—forces the tongue to the back of the pharynx and so obstructs respiration. A similar condition to this may arise when the mouth is too widely opened by gags or props.

(3) In addition to the above-mentioned causes of inter-current asphyxia during chloroform anæsthesia in dental operations, the re-administration of the anæsthetic which is necessary in many cases is also likely to introduce an asphyxial element, and so to augment the usual risks.

(4) In a word, we may say that in whatever way dental operations are performed under anæsthetics, some degree of respiratory embarrassment must almost necessarily attend the operation; that in the case of nitrous oxide and of ether this embarrassment may exist in a mild degree for some time, or may be very intense for a shorter time, without imperilling the patient's life; but that in the case of chloroform, owing to the low arterial tension and to the effect of this anæsthetic upon the heart, any such asphyxial complications are, as the cases of the Inquiry well illustrate, likely to lead to syncope, which may be so unexpected that it may be regarded as primary.

The Choice of General Anæsthetics for Dental Operations; the Sphere of Applicability of Chloroform.

It is impossible to define the sphere of applicability of chloroform without saying a few words as to the choice of dental anæsthetics in general. Recent developments in the method of administering nitrous oxide have given to this anæsthetic an even wider range of utility than that which it formerly enjoyed. I especially refer to the use of small quantities of oxygen with this gas. By this method nitrous oxide is rendered almost, if not absolutely harmless, for the one dangerous element in its administration is eliminated. Nitrous oxide should therefore be unhesitatingly chosen, preferably with oxygen, in every case in which the anæsthesia is likely to be of sufficient duration. If the whole operation cannot be

accomplished under one administration of the gas, it is better to arrange for subsequent administrations than to put the patient to the discomfort of ether anæsthesia. Even a second inhalation, soon after the first, is less likely to be followed by unpleasant effects than the use of ether. But when the circumstances are such that a long anæsthesia is needed, ether should be selected, preceded by nitrous oxide to obviate the unpleasant taste and and smell of the ether.

Nitrous oxide and ether have the great advantage over chloroform for dental operations that they may be given to patients in the sitting posture—the best possible posture, not only because it is far more convenient than any other to the operator, but because when blood and fragments of teeth are present in the oral cavity they tend rather to remain in the floor of the mouth than to gravitate backwards and to set up asphyxial symptoms.

Ether is often regarded as producing a less satisfactory anæsthesia than chloroform, but this is a mistake which is readily explained. Those who hold such an opinion have probably not seen ether properly given. The last named agent possesses one great advantage in dental surgery which chloroform lacks, that is to say, the patient can be “charged up,” so to speak, with such a dose of the anæsthetic that an operation of several minutes’ duration may be performed without any re-administration being necessary. Should a re-application of the inhaler be found desirable, there is not that objection to such a procedure as in the case of chloroform. All that is needed is to tilt the patient’s body well forwards in the chair (keeping a Mason’s gag in the mouth) and to adapt the inhaler (preferably one of Ormsby’s pattern) to the face: all blood will flow out of the mouth, and ether vapour will be inhaled, respiration remaining unembarrassed.

There are extremely few cases in which neither nitrous oxide nor ether should be chosen, although such cases do occasionally present themselves. Under such circumstances chloroform or the A.C.E. mixture should be given. Thus, if several difficult teeth have to be removed from a patient with some heart, lung, pleural, or abdominal affection which is attended by great dyspnœa, so that ether is contra-indicated, one of the agents mentioned should be chosen.

In concluding these few remarks, I would add that what we

really need at the present time is better and more systematic instruction in ether-giving. This would infallibly lead, not only to a better opinion being formed of this anæsthetic, but to a diminution in fatalities during dental operations.

The Chief Points to which Attention should be paid in the administration of Chloroform for Dental Operations.

Whatever arguments may be brought forward against chloroform, there can be no doubt that it will continue for some time yet to be largely used as an anæsthetic in dental surgery. It must, however, gradually find its proper level, and will then only be employed in exceptional cases. In the meantime it may not be out of place to offer some suggestions for its administration, based upon the evidence which has been investigated during the course of this Inquiry.

In addition to the preparations, precautions, and principles which are recognised as essential for success in the administration of chloroform for ordinary surgical operations, the following special points should receive attention :—

(1) Seeing that there is a liability, when chloroform is administered for dental operations, for undetected embarrassment of breathing to arise, it is of paramount importance that the administrator should make absolutely certain from the commencement of the administration, till consciousness is restored, that air is entering and leaving the chest. Mechanical obstruction within the air-tract, from the numerous causes which have been fully discussed, is very prone to occur, and unless the administrator actually hears or feels throughout the administration that breathing is proceeding, he may easily be misled.

(2) The administration should be conducted with the patient in the dorsal posture, the head and shoulders being so adjusted by pillows that the head is neither flexed nor extended—in other words, it should remain in the longitudinal axis of the body. Should the operator have no objection, the head should be turned to one side.

(3) Owing to the fact that breathing is liable to become interfered with, either by extending or flexing the head upon the trunk, an attempt should be made to keep the head in the axis indicated throughout the operation. Should it become

necessary to throw the head well back, this should be done when the patient is properly under the anæsthetic, care being taken, when this extension is present, that no blood or extracted teeth gravitate towards the open larynx.

(4) Care should also be taken during operations upon the lower jaw, or when employing a mouth-gag or prop, lest the depression of the lower jaw interfere with breathing by causing the base of the tongue to meet the pharyngeal wall.

(5) Intercurrent asphyxia, from the causes which have been given in the above Inquiry, is more likely to arise during a light than during a deep anæsthesia; so that the administrator should be on the alert for this condition just as the patient is entering upon and leaving profound unconsciousness.

(6) The patient should be placed deeply under chloroform before any operation is begun. Should signs of recovery manifest themselves before the operation is completed, care should be exercised in re-applying the chloroform; the head should be turned to one side for the escape of blood; a free air-way maintained by means of a Mason's gag not too widely opened; a very small quantity of chloroform will be needed to reproduce anæsthesia; and from this point onwards only moderately deep insensibility should be maintained.

(7) Patients with naso-pharyngeal adenoid growths, nasal polypi, or enlarged tonsils should be anæsthetised with special care, owing to the greater tendency which such patients display to become asphyxiated.

(8) At the conclusion of the operation the patient should be at once turned upon his side, a Mason's gag being placed between his jaws till consciousness is nearly regained. The side posture allows all blood to drain from the mouth and fauces, the tongue to gravitate towards the cheek, and by reason of the free respiration thus established, chloroform quickly escapes from the circulation.

DISCUSSION.

Dr. DAVID WALLACE (Edinburgh) in opening the discussion, said: In the short time at my disposal it is impossible to take up *seriatim* the numerous points which have been raised, and I propose, therefore, to allude in detail to only two.

First, I would draw your attention to the statistics which Mr. Hewitt has laid before us in table No. I. Those statistics are most startling from the chloroformist's point of view—they are, indeed, so startling that one feels that they are extremely difficult to combat. But in regard to them there are one or two points which I think our attention should not miss. They are deficient in more particulars than one. In the first place, we do not know the relative number of administrations of ether and chloroform in the three arbitrary divisions Mr. Hewitt has formed; and, in the second place, we do not know the relative number of teeth extractions performed under a general anæsthetic, other than nitrous oxide, in those three divisions. No doubt Dr. Hewitt is more or less accurate when he says that presumably the frequency relative to the population is nearly the same in all the divisions, and also that ether is used most commonly in London, chloroform in Scotland, and those two drugs more equally in the provinces of England and Wales. But he leaves us still in this doubt: What is the proportion between chloroform and ether in the provinces? Now I must say I think that, taken all over, chloroform will probably be administered much more frequently than ether, except in the large centres where there exist special anæsthetists, to whom I shall refer presently. I would point out that in London particularly we have special anæsthetists who are altogether wanting in Scotland; and I think all will admit that when the anæsthetic is to be administered by one who is specially skilled and daily occupied in the administration of anæsthetics, and, more important still, who, as far as I can learn, is wholly responsible for the administration of the anæsthetic, it will be given with less risk—the risk of any anæsthetic will be very greatly diminished. It would have been more satisfactory had we got information relative to hospital practice, where these various points to which I have referred could have been accurately gauged. If we take, for instance, the Dental Hospital in Edinburgh, I understand that within recent years probably over three hundred operations have been performed annually—teeth extracted—and no accident has happened. Not only has no accident occurred, but cause for anxiety has not been present in more than a very small number of cases. What is done in the Dental Hospital is, to a certain extent, equivalent to

what is done by the anæsthetists in London. A special gentleman is asked to take charge of the chloroform cases—a most important thing, as I have already indicated, but the carrying out of which, in other places than large centres is, in my opinion, not only altogether impossible, but in being impossible, renders the advisability of a special anæsthetist a very questionable proceeding in large teaching centres. I will refer to this again if time permits.

Now, with regard to ether and chloroform in general surgery, including dental surgery, I think it is generally admitted that while safety is apparently greater in some places than others, yet, taken all over from the statistics as at present drawn up, ether is safer than chloroform. That must be granted. The proportion often given is one death from ether in 10,000 cases; one death from chloroform in 2,000. We are told from these statistics that ether is five times safer than chloroform. With regard to this, I wish to call your attention to four points. First, it seems impossible to get accurate records of all cases of anæsthesia, but it is certainly wrong to exclude cases of chloroform administration in India, where we find Surg.-Major Laurie, Dr. Neve, and others giving an enormous series of chloroform administrations without a death. Dr. Laurie, for instance, has given, I think I am right in saying, 45,000 cases without a single death. Why should those 45,000 cases not be added to the statistics that are given in Germany, in America, and in England, so as to lower the percentage mortality of deaths from chloroform? If that were done I think the proportion would be more similar to that of ether. Secondly, statistics refer to deaths on the table; but it is admitted by etherists that there is a greater risk of death from pneumonia and bronchitis, and so on, a day or two later, with ether, than when chloroform is used. Thirdly, Dr. Hewitt himself, and all etherists, as far as I am aware, lay down certain conditions which constitute contra-indications to the use of ether, and say in those cases, give chloroform. Then I say in all such cases where ether is inadmissible and chloroform given, if an accident occurred, such an accident should be excluded from the statistics, otherwise the comparison is an unfair one.

Let us consider for a moment what these contra-indications are. I take an article appearing in a French review recently

published by Challot, a convert to ether from chloroform, and one who hopes that many proselytes will follow in his steps, because he has had so much peace of mind, as he expresses it, since he has used ether instead of chloroform. He puts it thus: that when chloroform was used he had the constant dread that a death might occur; but now that he uses ether such a dread is wholly absent. My retort is that if he goes to operations with a dread of accident absent from his mind, deaths are extremely apt to occur. It matters not what the anæsthetic is, I believe that the border line is not so very great but that a death may take place. But listen to the contra-indications which he gives. First of all, acute inflammations of any part of the respiratory tract, comprising pleurisies; secondly, all chronic conditions affecting the respiratory tract, such as asthma, emphysema, tuberculosis; third, the presence of any goitre or other structure which interferes with free respiration. I would ask you, if you take the last, if chloroform is to be given in such a case, is it not just in that case we think of the great danger from the risk of asphyxia? Therefore my first point is that in all cases where ether is inadmissible, when chloroform is given, if an accident occurs, that accident should be excluded from our statistics. Fourthly, he takes all operations upon the brain; fifthly, any operations upon anterior parts of the face or neck; sixthly, the necessity of employing—this is more or less self-evident—the thermo-cautery or the galvanic cautery. And, lastly, what does he say? He says that where there is a necessity to operate in badly situated places, low roofs, bad ventilation, or bad light, chloroform should be used. Would anyone wish to give an anæsthetic under such circumstances? I say if that is a contra-indication to the use of ether, it always points to chloroform being the special drug in the mind of M. Challot.

Fourthly—and I now come to the consideration of the second table in Mr. Hewitt's synopsis—I would point out that deaths *from* chloroform are totally different from deaths *under* chloroform. Dr. Hewitt classes eight cases under death from asphyxia, or asphyxial syncope; but in my opinion that is equivalent to death from mal-administration. Far be it from me to say that with the greatest care accidents may not occur in the most skilled hands. We all more or less dread accidents,

whatever the anæsthetic used, when we are dealing with a powerful drug: but still I say, if Dr. Hewitt is right in his belief that those eight cases succumbed from asphyxia or asphyxial syncope, then those are deaths from mal-administration. It may have been that the posture was not a suitable one; it may have been that there were other causes not attended to at the time when the chloroform was being given. I take Dr. Hewitt's own opinion upon this subject, and I say if they were deaths from asphyxia or asphyxial syncope, they were equivalent to deaths from mal-administration. And this throws me back to the point I have already alluded to, that mal-administration is much less probable with ether than with chloroform, as the former is given by a special anæsthetist, as a rule, while chloroform is given by all and sundry, and of necessity by all and sundry. Who is responsible for the various cases of death that Dr. Hewitt has recorded? Was the administrator in all those cases thoroughly competent? These are questions which I think have a bearing upon the point. Now this second table, as I understand has been drawn up by Dr. Hewitt from material supplied by various persons responsible for the chloroform administration, and he has classified the cases under headings, suitable in his opinion to distinguish them into groups. In one group, "deep anæsthesia," he places three cases, and states that they are perhaps, deaths from over-dose, parenthetically remarking possibly, but not so probably, "cardiac inhibition." Unless by cardiac inhibition is intended poisoning of the cardiac centres, secondary to the respiratory centres, which is equivalent to chloroform poisoning and totally distinct from syncope, I would say that he alludes to the three cases of the nine recorded in which cardiac inhibition would never occur. I shall presently explain this when I allude to "light anæsthesia," in which cardiac syncope may occur. Under "light anæsthesia" he places eleven cases, eight of which I have referred to as tantamount to mal-administration. Then in two cases, 4 and 5, he says "possibly syncope"; but those were cases in an improper posture, and I note that in one only from 40 to 50 minims of chloroform were given, and in the other only half a drachm; in both death took place before the chloroform had been given to any extent, and before the operation had been begun. Now light anæsthesia is in my mind a state in which

no operation should be attempted. When chloroform has been administered to that extent merely the patient may have cardiac failure. I think the question concerning shock occurring with chloroform and never with nitrous oxide, to which Dr. Hewitt referred, can be answered; and the example I take has a very special bearing on dental surgery. Chloroform and ether are safe drugs because they do not paralyse all the reflexes at the same time; sensation first; motion and sensory reflex, second; the respiratory centre third; and the cardiac centre fourth. Anæsthesia suitable for the surgeon is when the sensory reflexes motion and pain are abolished before the respiratory is affected. A tooth is drawn from a person who has no anæsthetic; he may faint because the irritation of the sensory nerve, the fifth, has two effects: first, acting through the vagus-cardio inhibitory fibres reflexly it causes stoppage of the heart and syncope; secondly, it causes reflex contraction, through the vaso-motor mechanism of the arterioles, and raises the blood pressure, and the tendency to syncope is counteracted. In complete anæsthesia these reflexes are abolished, and irritation of the fifth sensory nerve, or any other sensory nerve, has no effect upon the heart or the arterioles. In incomplete anæsthesia, in light anæsthesia, as Dr. Hewitt terms it, the reflex centre for the arterioles may be paralysed, while the vagus-cardio inhibitory fibres is unaffected. The irritation caused by the extraction can cause stoppage of the heart, and there being nothing to counteract it, syncope results and may prove fatal. That is, I believe, the reason why syncope may take place in a patient who is insufficiently chloroformed. That patient is lowered in his power of resistance. The strong, healthy man braces himself up and stands the pain of the extraction of the tooth. Give a man sufficient chloroform to simply dull the sensation, you weaken his power of resistance, and the risk in the way I have mentioned is, I believe, greatly enhanced.

Now, why should this not occur with nitrous oxide? I believe it is due to a well-known physiological principle. With nitrous oxide the danger is much less, as associated with it there is a venous condition of the blood, with consequent contraction of the arterioles and rise in the arterial pressure, so that any approach to syncope through vagus irritation is avoided. That, I believe, is probably the explana-

tion, and Dr. Lauder Brunton, one of our greatest authorities upon therapeutics, maintains this view. It is the explanation which, I believe, accounts for the difference in the administration of nitrous oxide and light anæsthesia from chloroform. I believe there is much greater risk of death from vaso-motor paralysis than from cardiac inhibition, and this is one of the strongest reasons why a patient should be invariably placed in the recumbent position when anæsthetised. Kocher, a well-known German surgeon, goes so far as to say that all operations under chloroform should be performed with the legs and pelvis at a higher level than the body, and I think there is a great deal in that for this reason: that when the patient is in the recumbent posture the blood in the veins passes more readily to the heart, and we do not have the abdominal veins distended. The patient, where such distension of the abdominal veins occurs, is practically bled into his abdomen. The blood is not on the floor, but it might just as well be on the floor, for all the use he can make of it when in his widely distended veins. Further, in the recumbent posture the brain and the medulla oblongata are better supplied with blood. Note what occurs in a child under chloroform when inversion is resorted to. The face becomes red, and the child quickly awakens—a useful hint to those who wish a child to come quickly out of chloroform. You have finished your operation. You know with children the chloroform seems to have a greater and greater effect, and the child sleeps very soundly, very deeply. Raise the child up by the legs, raise the lower part of the body—immediately you find the circulation improves, the face becomes red, and the child very generally awakens with a cry. The child might otherwise have gone on sleeping half an hour or an hour, during which time the surgeon might have required to stay beside the bed side.

I now pass to my second point—What is the relative convenience of ether and chloroform in surgery, particularly dental surgery? My first point is that before ether can displace chloroform as the routine anæsthetic, we must be sure that its method of administration, &c., is thoroughly mastered. We want information regarding the two methods in use, the *open* and the *close*: which method is to be used? The *open* we know to have some disadvantages over the *close*. First, the quantity of drug used is very much greater;

second, the length of time required is very much longer; third, the difficulty to put the patient thoroughly under, and after he is under, the short time he remains anæsthetised—both important points in connection with dental surgery, because the patient having been put under the anæsthetic, the mouth is opened, the gag is introduced, and the extraction of teeth is commenced. You want, in certain cases, a few minutes to elapse before more chloroform or ether is given; and therefore if ether does not keep the patient under its influence sufficiently for a few minutes—well, chloroform does. I think, from a practical point of view, the convenience of chloroform is greater than the convenience of ether. I know that in the close method, when ether is properly administered, you have the patient put under as quickly as with chloroform, or more quickly. You have the patient put as thoroughly under as with chloroform; you have the patient remaining under for nearly as long a time as with chloroform. But what is the objection to the close method? The objection is that to which I have alluded once or twice already—a special anæsthetist, or, at any rate, a skilled person, is required. Now think of the present state of our country. You cannot have assistants giving ether at trivial operations; you cannot have assistants giving ether when a patient is being confined; in other words, the doctor falls back upon his own resources—his unaided skill. He gives a drug, and while the drug is acting he does what is necessary. Now I say that that is imperative in great parts of the country. In the first place, doctors are so far separated. I have been in some parts of the Highlands where there has only been one doctor within thirty miles. Supposing the doctor has to go the thirty miles to see his patient: how is he to get anyone to give ether? Still less, how is he to get anyone who is in practice sufficiently to give ether by the close method? I say, therefore, to a very great extent, when we pass out of our large centres, we have to exclude the close method, which is the method, in convenience, analogous to chloroform; and we have to fall back upon the open method; considered by some dangerous, but yet, I think, admitted by the majority a most convenient method as compared with the close; or we must use chloroform anæsthetisation. Can ether be given with, say, Clover's apparatus, by one who is not sufficiently

skilled—not only one who has been specially taught, but by one who is in practice in the administration? That, I think, is almost an insurmountable difficulty in connection with the administration of ether as the routine anæsthetic in general surgery, or in dental surgery. I admit, then, as Dr. Hewitt has told you to-day, that ether has apparently a broader workable area than chloroform. I think it is for the unskilled administrator theoretically safe, but I believe practically, for general use, the convenience of chloroform counterbalances this theoretical safety, and that it is the best for the general practitioner.

I now come to this. Why is it that we have accidents occurring every now and then, and admittedly occurring with chloroform? Well, I believe in the first instance that the very discussions which have been raised have tended towards those accidents; a form of terror has been produced in the minds of the public, and this terror in the minds of the public has reacted upon medical men; and it is a common thing to find a man who previously would give chloroform without any special anxiety—taking great care, no doubt—now terrified to give it; and we are led into the great risk of too little chloroform. Most men know when too much has been given. Many men are very apt to say, "Oh, a whiff will do—just a little; he seems quite quiet, it will only take a moment"; and the operation is begun in just those circumstances, when I say there is the risk of syncope. I say now what Prof. Syme said in 1855: "The risk of accidents occurring in some places and not in others, must depend upon one or all of three factors; first, the drug which is being used; second, the patient who is getting the drug; and third, the mode of administration." I presume in most places the drug is the same; I presume that patients do not differ much in different parts of the country, or it may be, of the world; but I hold that the method of administration differs enormously in this; that whereas, according to Syme, Simpson, and those of that school, one thing, and one thing only, is to be observed, namely, the respiration; in other places it is taught that not only is the respiration to be considered, but the pulse is to be felt, that the pupil is to be observed, and so on. Now, I hold that feeling the pulse, quite apart from abstracting the attention of the administrator from the respiration, the all-impor-

tant point, is a source of danger in itself. What do I mean by that? Chloroform may give rise to sickness, and associated with the sickness there is faintness, the indication of this is partly the appearance of the face, partly the condition of the pulse. The administrator who trusts to the pulse, feeling the pulse weak, becomes to a certain extent alarmed, withdraws the cloth and waits. He is doing the very wrong thing. So long as the respiration is going on unhampered, so long as breath is passing easily to and fro, then the pulse being weak, for the reason I have given, more chloroform should be administered. As the chloroform is administered the pulse becomes stronger, the colour of the face becomes better, the patient passes out of a condition of apparent danger into a condition of security and safety. I have detained you longer than I had intended. There are many important points in this most interesting subject to which I should have liked to refer. Let me impress upon you, however, these two points in the administration of chloroform, and then I believe that the anxiety regarding it will be much diminished. First, see that the patient is absolutely in the recumbent posture, that nothing can interfere with free respiration; and second, guide yourself solely by the effect of the chloroform, and not by the quantity used; and the guide to that, so far as safety is concerned, is free respiration.

Lastly, I will say this one word. It is a remarkable and astonishing fact, as an American recently said, that within eight and a-half months of the introduction of ether it was used practically over the whole civilised world, and yet, within two and a-half years from the introduction of ether, chloroform having been introduced, the use of ether was displaced by it practically over the civilised world. Why should that have been? The time was too short for the relative dangers of the two drugs to have been gauged; it must have been, I think, because chloroform was found a much more convenient drug for routine practice. Gentlemen, I believe that that still holds; I believe that chloroform is the best drug for routine practice.

Mr. J. S. TURNER asked that the discussion should be limited, as far as possible, to the advantages of the drugs in reference to dental operations. They had heard a good deal of the various merits of chloroform and ether in surgery,

but the remarks made seemed to apply to general surgery, and the conditions in which a practitioner might be placed in an isolated district. That did not interest them quite so much as it might do if they were in another line of practice. He hoped the discussion for the sake of time would, as far as possible, be confined to the merits of the anæsthetics in reference to dental operations.

Mr. J. F. COLYER remarked that when a patient came to them in dental surgery and required an anæsthetic, it was their duty to consider what was the most reliable and the safest anæsthetic to give the patient. The first point would be, whether any conditions arose in practice when chloroform was indicated. He did not think so. In his work at the Dental Hospital, which extended over a period of ten years, there had not been, to his knowledge, during the whole of that time a single administration of chloroform; in other words, at the largest and busiest of our dental hospitals it was never found necessary to administer chloroform. In the ordinary practice too he had never found the administration of chloroform necessary. The only condition in which it might be needful was in prolonged operations, such as the extraction of a large number of teeth, or for the difficult extraction of an impacted wisdom tooth. But in both of these ether could be used. Statistics overwhelmingly proved that chloroform was a very much more dangerous drug than ether or gas, and though it may be argued that the dangers of chloroform were due to careless administration, he himself thought that nitrous oxide in the routine work of dental surgery was given equally carelessly, and taking it all round, more carelessly than chloroform in similar operations, and yet, as compared with chloroform, the deaths from nitrous oxide were comparatively rare, and generally due to some accidental cause rather than the anæsthetic itself. He thought Dr. Hewitt's statistics spoke for themselves, and showed that they certainly were not justified in giving chloroform. When patients came to him requiring chloroform he refused to give it, and pointed out its disadvantages, and if their medical man said they must have chloroform he asked that they should be taken to some one else. What was required of dental surgeons was that they should have the courage of their opinions, and knowing that chloroform was a dangerous drug should not allow chloroform to

be given merely because the medical man wished to give it on account of his inability to administer ether.

Mr. G. CUNNINGHAM said he did not propose to discuss the merits of either ether or chloroform, but he wished to say a single word with regard to the cases requiring ether or chloroform. It was a measure of dentistry where such cases required either drug, and he was happy to say there were a large number of practices going on and daily increasing, thanks to their schools where such major operations in dental surgery were not required. Some of them were also glad to find that where anæsthetists appealed to them to supply details of cases giving statistics with regard to nitrous oxide, that even administrations for extraction under gas had diminished to such an extent that their records were worth nothing to anæsthetic staticians.

Mr. DENT said they should not ignore the fact that large operations such as had been referred to were sometimes necessary. For example, patients were sent to them suffering from indigestion, their medical man says they must have their teeth out. In such cases they could do nothing but take out all the teeth; the doctor urged it, and it was very difficult to refuse. When there were a number of stumps with abscesses and in bad condition, that seemed the only way of dealing with them. This was a point which had to be considered. Those engaged in city practices did not know much of it, but in the country they often had to take a doctor who could not give ether, and Dr. Hewitt's suggestion that ether should be taught more thoroughly in the schools was therefore very important.

Mr. FISK said sometimes in the country they had patients sent to them perhaps sixty years of age, with perhaps fifteen stumps to be removed. If in such cases three, four or five roots only were removed at a sitting, and the patients were sent home again for long distances, it would entail a considerable amount of expense. Such patients could be treated better in general hospitals where chloroform or ether could be administered and they were made in-patients. At the West Hunts Infirmary such cases were treated as in-patients where it was necessary to give an anæsthetic. In such cases he preferred nitrous oxide and ether, but the question was to get the men to give it. The general practitioners could not

be relied upon to administer gas and ether, but they could give chloroform. Though strongly believing in gas and ether, and preferring it to chloroform, the difficulty was in getting men in the rural districts who could administer it.

Dr. WILLIAMSON thought that the subject, though of intense interest to dentists, was yet one quite outside their province, inasmuch as they did not administer either chloroform or ether, and were not responsible at all in the matter. In Scotland, the ordinary family medical attendant of the patient was the administrator, and was the analogue of the London special anæsthetist. To him, therefore, in the matter of chloroform or ether, the dentist must bow, while the position was reversed in the matter of the administration of gas, a knowledge of which, the medical man did not profess to have. Taking Aberdeen as an example of a large Scotch city, there was only one, as far as he knew, out of fifty practitioners, who could be called an "etherist," so it followed that chloroform was almost invariably given. He believed from inquiry that there had been no fatality in the city for thirty years back from chloroform in dental cases, though there had been some few in connection with other operations, a fact which would tend to prove that there was not the peculiar fatality indicated by Dr. Hewitt. In Dr. Hewitt's work on "Anæsthetics," published in 1893, an analysis of 210 deaths from chloroform is given, with the nature of the operation. Of these 210, 18 occurred in teeth extraction cases, while there were 36 in amputations, 20 in operations on male genito-urinary organs, 17 in removal of tumours, and 16 each in dislocations and operations on the eye. Thus in all these groups of operations, it might be argued that fatal results were liable to occur, and that consequently, surgeons performing such, should have a special warning addressed to them, especially as the poor innocent Scotch dentist was adjured to give up the use of a drug he does not administer, and for the effects of which, he has no responsibility. Every listener to Dr. Hewitt's paper would, however, admit the startling nature of his new statistics and the sustained force of his argument throughout.

Dr. HEWITT: In the ten minutes at my disposal I must ask your indulgence if I reply collectively to those gentlemen who have been kind enough to make remarks in connection with this subject. I brought with me certain facts, and I

venture to contend that my facts have not been attacked. I have brought with me certain work; humble as it was it embodied an inquiry, but the gentlemen who have spoken have not confined themselves to the facts before this meeting. I have ventured to make certain statements, but the gentlemen who have replied have not followed up those statements, or answered them satisfactorily. We have had at the same time expression of weakness from all sides. We have met here without any personal bias, without any aggressive spirit; we have simply met together to bring certain facts to Scotland for Scotland to explain; but the representatives of this country have not come forward to explain those facts, and until they are explained I venture to think that they must hold good. Unless anyone can prove that the facts which I have ventured to bring forward are wanting in solid foundation, then they remain unexplained. Now, Sir, this is a very serious matter, and when I see that even Dr. Wallace, whose remarks have been most interesting, has found it necessary to wander off into by-paths, and not only that, but to refer to obscure French gentlemen of whom I have never heard, gentlemen who reside in India and in other parts of the world—when I see that he found it necessary to go to other countries and to find the opinions of some obscure people in order to reply to definite statements which I have brought forward, I say that that is simply due to weakness and not to strength. There is no strength in any of the arguments, so far as I have seen, that have been brought forward. Statistics are admittedly liable to all sorts of interpretations. I have not compared the number of ether fatalities with the number of chloroform fatalities—the very thing that Dr. Wallace would have placed reliance upon if I had been able to bring such statements forward—simply because I know if there is any fallacy at all it is in statistics of that description. I have simply stated that there is a far larger number of recorded fatalities in Scotland than in other parts of Great Britain—I am talking of dental anæsthetics generally—and I want to know how it is that these fatalities have occurred, and if any gentleman in this Association will answer that question, then we shall perhaps be able to make some satisfactory movement in the matter. But we do not want to know anything about the use of chloroform in any of

those directions to which gentlemen have alluded; we are merely referring to dental operations and to the use of anæsthetics in dental operations. One quite understands that there is a large number of cases in which some anæsthetic other than nitrous oxide must be used, and it is for those cases that we wish to ascertain which is the safest anæsthetic. Now a poor, ignorant patient coming to a dentist has not the opportunity of making himself familiar with well-known facts as to safety. He wishes to return home to his family. If he were asked, "Would you like a little eau de Cologne," or a little something else that is very pleasant, "instead of this ether?" he would probably say: "Well, I think I should prefer the eau de Cologne." But that is not the point: the dental practitioner has his practice to look to, and he is the representative of the whole dental profession. The gentleman who administers the anæsthetic is, or should be, the representative of the medical profession, and between them they ought to be responsible for the safety of that patient, and to give that patient the very best opportunity of joining his family at home that can possibly be afforded. Now I venture to say that a practitioner who gives chloroform to a patient who comes to have a tooth removed submits his patient to an unnecessary risk. I say that we are bound to respect that side of the question, and if ether is shown to be the safest anæsthetic—and even Dr. Wallace admits that it is—then I say we ought, in some way or another, to educate our students in the administration of ether so that when they go out into practice they may not be in the very unfortunate position, to which Mr. Colyer referred, of saying that they cannot give gas or ether, but can give chloroform. It seems to me that a great many people fall back upon chloroform simply because it is extremely easy to administer and because it is pleasant to the patient. If ease in administration and the gratification of the patient's senses are to be considered before safety, then the sooner we cease to pose as a life-saving profession the better. Now let me refer to one or two points in Dr. Wallace's address. Without any personal feeling to Dr. Wallace or anybody else, I must submit to this meeting that my points have not been attacked as they should have been. I have made a definite proposition in Scotland, and I wish to know in what part of my argu-

ment my contentions are unsound. I take it as an explanation of this weakness that nearly everyone who has spoken has wandered from the point which I have raised. Dr. Wallace has referred to Dr. Laurie having conducted 40,000 administrations of chloroform. I believe there must be some mistake. Dr. Laurie is about 40 years of age: this would mean three administrations a day for the whole of his life, including Sundays. I think Dr. Wallace must mean that, counting Mr. Symes' and other people's administrations, there are 40,000 recorded administrations of chloroform without fatality. I believe I am correct.

Dr. WALLACE: No, excuse me; the point I think is this—that Dr. Laurie holds himself responsible for those cases administered in the hospital at Hyderabad, when he is present,—taking all the cases he has been responsible more or less for. I think I got that figure just the other day, but I qualified the expression by saying as far as my recollection went.

Dr. HEWITT: Then, of course, we cannot take into consideration cases that a gentleman holds himself responsible for without having actually administered the chloroform.

Dr. WALLACE: Excuse me again; that raises this important question in connection with the special anæsthetist,—is he responsible or is the surgeon who has charge of the case? I have no doubt Dr. Hewitt when he goes to a case says, "I am responsible," and he would refuse to give ether or chloroform at the surgeon's desire; but where there is no special anæsthetist, the surgeon, I consider, is the responsible person, and in being so I am inclined to think he must take upon his shoulders, not only successful cases, but also those cases that prove unsuccessful.

Dr. HEWITT: The very fact that Dr. Wallace has attributed the success which has attended the use of ether to the presence, on the occasions on which anæsthetics have been given, of those who have been skilled in their administration, is in itself, it seems to me, a very considerable argument for the introduction into Scotland of a system which has been found to work so well in England. What is really required at all hospitals is a properly qualified man accustomed to give anæsthetics, and in the smaller towns doctors who have been thoroughly instructed under an administrator at a hospital in the use of nitrous oxide and ether. In fact, where there

are dental hospitals, it ought to be possible—and I hope we shall one day see this in London—for instruction to be given to students and practitioners in the use of anæsthetics, so that they may be thoroughly competent to administer. But, as I say, the fact of Dr. Wallace showing this difference in results proves the necessity in this country for the adoption of some sort of system of that kind, in order to diminish the death-rate to which I have alluded. Then, as to the venous condition of the blood keeping up arterial tension; if this is the explanation of the absence of shock in nitrous oxide cases, may I ask Dr. Wallace or anyone else why patients are not asphyxiated under chloroform with the very object of preventing shock? It has been shown by the gentleman to whom Dr. Wallace referred, by Dr. Lauder Brunton, and by the Hyderabad Commission that the very thing under chloroform which is likely to lead to syncope, is the venous condition of the blood from asphyxia, whereas, according to what Dr. Wallace has said, this condition is in itself under nitrous oxide a safeguard.

In conclusion let me say I have not come prepared to enter into the question of the relative merits of anæsthetics in general; I have simply come to draw attention to certain facts in connection with the use of anæsthetics in dental surgery and I retire with the feeling that what I have brought forward has not been properly answered, and until some satisfactory answer has been given to this question I shall personally consider that the subject has not been thoroughly discussed, and say this without any personal feeling towards anyone. But I think the dental profession, considering its enlightened condition, considering the strides it has made in recent years, ought in some way or other to have definite rules laid down for the guidance of those who enter into practice, and whose experience has not been such as to entitle them to form opinions of their own. The dental profession ought certainly to have some well-defined laws for the guidance of its junior members, and I trust as the outcome of this discussion there may be some hope of that happy event being accomplished. I am extremely obliged for the way in which my remarks have been received, and I trust this may be a stepping-stone to a further and more complete investigation of the subject.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

Odontological Society of Great Britain.

THE first meeting of the Session was held on Monday, the 4th inst., at the Hospital, Leicester Square. The chair was taken by Mr. DAVID HEPBURN, L.D.S.Eng., the newly appointed President.

The PRESIDENT stated that the necessary obligation forms had been signed by the following : Messrs. William Jarvie, M.D.S. (105, Clinton Street, Brooklyn, N.Y., U.S.A.) ; Ernest H. A. Mackley (74, St. Giles Street, Norwich) ; John W. Tomlinson (8, Warrior Square, St. Leonards-on-Sea).

The following gentlemen were elected non-resident members of the Society :—Messrs. A. W. W. Hoffman, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng. (30, The Parade, Leamington) ; J. Sim Wallace, M.D., B.Sc. (29, St. James Road, Kingston-on-Thames).

The following gentleman was proposed as a non-resident member of the Society :—Mr. Henry Bambridge, L.D.S.I., R.C.S.I. (27, Viking Street, Gt. Yarmouth).

The PRESIDENT said he had much pleasure in bringing forward a recommendation made by the Council, that Mr. Balkwill, who had now retired from active work, should, in consideration of his many services and long membership, extending as far back as 1861, be elected an honorary member. This was carried by acclamation.

The LIBRARIAN having announced additions to the Library,

Mr. MAIN NICOL said he had two casual communications to bring forward. The first was a case of ptosis, associated with and apparently caused by a dental lesion. A young lady, aged 25, consulted him in June for severe unilateral facial neuralgia attended with partial closure of the right eye, dilatation of the pupil, and flushing of that side of the face. She stated that in a more than usually severe neuralgic seizure the pain had compelled her to close the eye, and she had been unable to open it fully since. A dental examination revealed only three small cavities in the right upper and lower third molars. They were intensely sensitive, and excavation was only possible after cocaine injection. They were filled with oxyphosphate. In four days she had completely recovered, the lid and pupil having regained their natural mobility. Taking everything into consideration, he ascribed the case to a purely functional hysterical condition, although the medical attendant stated that she had never shown any neuromimetic tendency.

The second case was one in which the maxillary tuberosity was fractured during the extraction of the second upper molar. Considerable force was requisite, and as the tooth came away it was evident that some extensive solution of continuity had taken place.

It was found that there was a vertical fracture of the body of the superior maxilla. The treatment consisted in the application of a splint and the use of antiseptic mouth washes. When last seen union was perfect and apparently osseous.

Mr. F. J. BENNETT asked if any inquiry had been made as to any history of influenza in the first case mentioned. He thought a great many of these obscure cases might be traced to that cause. He had met with similar cases which had yielded to antipyrin.

Mr. ALBERT thought Mr. Nicol's explanation of hysteria was entirely satisfactory. The fact of dilatation of the pupil was good evidence.

Mr. MATHESON described a case of fracture of the maxilla which occurred in the extraction of a first permanent molar. The fragment united without the application of a splint, but the cases showed how even in extracting a tooth so far forward as the first permanent molar, one must be prepared for such an accident.

Mr. NICOL said he had made enquiries, but there was no recent history of influenza in the first case.

Mr. BOYD WALLIS presented models showing supernumerary teeth. With reference to Mr. Harding's recent communication upon perchloride of mercury, he said from recent experiments, he had no doubt as to its value as an antiseptic in dental practice. With reference to discoloration, he asked whether it was due to the perchloride, or was it not rather the natural sequel to a dead nerve? He had specimens tested in solutions of perchloride, which had not changed colour in the least. Perchloride had the advantage that its antiseptic power was not destroyed by admixture with organic matter. Double cyanide of mercury and zinc was a powerful antiseptic, and was less irritating in its action than perchloride; but where severe pain existed he treated the tooth in the first instance with iodised phenol, with cocaine and menthol added. Another preparation worthy of notice was the biniodide of mercury, which had been found to have considerable antiseptic properties.

Mr. SAUNDERS exhibited an improved palatal scaler and finishing file.

The PRESIDENT then gave his Inaugural Address:—

GENTLEMEN,—In occupying the chair of the Odontological Society of Great Britain this evening for the first time as your President, it is not my intention to deliver to you a lengthy introductory address. Indeed I would willingly forego the ordeal altogether, but, bending before the inevitable, I crave your indulgence for a few minutes.

At a recent banquet given by this Society, Sir William Flower, whom we have the privilege of numbering amongst our honorary members, made pleasant reference to the hereditary principle displayed in our list of presidents, and it is a remarkable fact that in thirty-nine presidential years, no less than six sons of former presidents have been

chosen to fill the chair. Another point of interest in our presidential list is the fact that four gentlemen have been twice elected to office after considerable intervals, so that the links with the past have been thus further strengthened and maintained. History also at times repeats itself. It fell to my father, during his presidential year, to represent the Society at the funeral of Mr. Arnold Rogers, of honoured memory, who was so largely instrumental in bringing this Society into existence, and who ruled over its destinies with such fostering care during its earlier days ; and to me, your present President, came my first and I trust saddest official duty of representing you, when the great father of our profession, Sir John Tomes, was laid in his last resting place. This is not the time or place to speak of the mighty work done by him. We, as members of this Society, whilst mourning his loss, have only to feel grateful that he was spared to a ripe old age, that he was able to see in great measure the results of his unostentatious but never-ceasing labours, and that he left us crowned with all the honours that a grateful profession could bestow.

In the memoir of this great man which has recently appeared in the pages of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION, we trace his guiding spirit throughout all the onward steps of our professional progress, and let us hope that even a fuller history of his unrivalled career may yet be forthcoming to quicken and encourage those who continue to carry on the great work in which he took so active a part, and to inspire all the future members of our speciality with the full dignity and responsibility of that profession of which he was so bright an ornament.

As the older friends of the Society pass away, and no less than sixteen of our former presidents, with many honoured original members, are no longer with us, the ranks of the Society have been filled with not only a second, but I may almost say even a third generation of dentists, and to those of the original stock who remain it must indeed be gratifying to see the Society founded by them on so sure a basis, ever increasing and prospering, and becoming year by year more and more firmly established amongst the scientific societies of the land.

In the decade preceding the formation of our Society, weary and disappointing, vague and unsatisfying must have been the efforts of those high-minded practitioners who realised the burning necessity of some steps being taken for the consolidation of the profession and the future education of the dentist.

The natural reluctance of the College of Surgeons to take to itself a speciality little practised, less appreciated, and for the acquirement of which no recognised educational system existed, not unreasonably suggested to the minds of many that a solution of the difficulty might be found in organising a separate institution, which should be to dentists what the College of Surgeons was to surgeons. A few there were who considered that a medical or surgical degree with a little

special technical knowledge picked up subsequently haphazard, summed up the needs of any who desired to practise the speciality, at the same time ensuring a certain degree of respectability. But luckily there existed those who saw further into the future, who realised from their own dearly bought experience the full needs, educational, ethical and political, of the dentist ; who believed that while special education and training of a comprehensive character was an absolute necessity, at the same time association with an established medical or surgical body was the only means by which dentistry could be safely raised from its then chaotic condition and firmly established, as it deserved to be, as an integral portion of the great healing art.

The struggle between opposing factions was a hard one ; but happily for us the wiser heads, although in the minority, prevailed. After many and mature deliberations the Odontological Society was established in 1856, and soon, by force of reason, won over even its most stubborn opponents ; then all worked together for the common weal. One of the earliest undertakings of the Society was the foundation of the Dental Hospital of London and London School of Dental Surgery. It suggested a curriculum in which prominence was given to the requisite training for the attainment of special technical experience and the necessary manipulative skill, combining with these a sufficiency of anatomical, surgical, and general medical knowledge. Thus prepared, the College of Surgeons was once more appealed to, and this time not in vain.

The history of the granting of a Royal Charter which empowered the Royal College of Surgeons of England to institute a department in dental surgery in the year 1859, is too well known to dwell upon, but we must ever feel proud to recall the fact that our Society sowed the good seed that has since fructified so richly.

It is indeed impossible to dissociate the Odontological Society entirely from dental education and political progress, but in the phenomenally rapid evolution of which it was the germ, other organisations have developed, whose peculiar province it is to watch over these things. The Society, therefore, has leisure to quietly pursue its own ends.

It has done a great work in the past and it has a great work before it in the future ; indeed in one way it is capable of exercising even a wider influence than any other existing dental institution. One important feature is the fact that it is the chief medium by means of which odontology is brought into immediate contact with kindred sciences. Again, it forms a common debating ground for vexed questions on points where general and dental pathology and practice meet, as many invaluable papers by leading medical men read and discussed at our meetings can testify. The interchange of our publications with those of learned societies at home and abroad is a feature also which must not be overlooked.

That the Society might do something in the way of endowing research is a point I refer to with delicacy. On the question of its desirability I have no doubt in my own mind, but we must not lose sight of the fact that although a wise and careful policy in the past has enabled us to accumulate a small reserve fund at this epoch, we know that ere long a large demand may be made upon it. Our home is but temporary, and although our child, "The Dental Hospital of London," has up to this time been able to treat its parent with leniency, there is no saying what may take place when the present premises have to be abandoned. I, therefore, during my term of office, shall feel bound sacredly to harbour our resources, none the less hoping that in the near future the Society may be in a position to expend adequate sums for the encouragement of investigation and research, and also for the still further improvement of our unique museum, and the extension of our library.

Meanwhile, I believe we shall not lack material on which to base our discussions, for new pathways of experiment and inquiry are daily unfolding themselves in the ever broadening plain of modern dental science, and we may rest assured that the voluntary work which has not failed us in the past will continue to be our portion in the future.

There are, however, lines of research which cannot be carried through without considerable outlay—vexed questions, needing for their solution the laboratory and its appliances; questions which might be worked out by young enthusiasts, of which our profession claims not a few, possessing the time and the ability, but lacking the means, and it is in this direction that the Society will do well ere long to turn its attention and lend its aid. In doing so it will but be following in the wake of older societies, which have already found such a course expedient and useful.

Since the last meeting of the Society the world of science has lost two of its greatest lights—Pasteur and Huxley. The stupendous and revolutionising work of the former will probably be more fully realised by future generations than it is by ourselves; but with the latter, Professor Huxley, we are in closer touch, for he was a keen odontologist, and, moreover, an honorary member of our Society. To this great man it is proposed, under the auspices of the Royal Society, to promote a national memorial—a project which this Society, of which he was so distinguished a member, will, I am sure, be proud to support.

I have referred to these two distinguished scientists because I feel the lesson of their lives is one which all those who cultivate the pursuit of knowledge, even in the humblest way, may well take to heart.

As your chosen President for the year, my time and services, such as they be, are entirely at your command, and with my able secre-

taries, helpful Council, and your never-failing support, I have no fear but that the work of the session will be profitable and useful, not only to ourselves, but also to the profession at large.

The adjourned discussion on the paper by Mr. Cunningham on the "Immediate Regulation of Teeth," read at the June meeting, of which the following is an abstract, was then resumed :—

In the last quarter century orthodontia has made as solid progress as any other branch of the art and science of dentistry, but despite the ingenuity and efficacy of newer methods and appliances, the treatment still extends over a period of several weeks, or more frequently months.

The fact that "torsion" has been successful, coupled with the knowledge of the extraordinary repair which takes place in cases of fracture of the jaw, even when accompanied by complete dislocation of the teeth, induced the thought—why not in cases of irregularity produce an artificial fracture of the alveolus, and expect similar repair after re-arranging and fixing the teeth in a regular position? I determined therefore to test this method in certain cases of irregularity where the ordinary treatment was not applicable. The opportunities for such experiments were not frequent in private practice, and progress was slow, as results of moving single teeth had to be awaited before daring to move several teeth. The improvement in the method of conducting the operation, the nature of the accidents likely to occur, as well as the mode of their control, and the kind of cases where this method seems most applicable, I will now call your attention to.

The first slide represents models of my first case of luxation, which dates from July 29, 1886. The right upper molar, very extensively decayed, was quite close to the first bicuspid, while the second bicuspid was rotated on its long axis, and completely outside the arch projecting towards the palate, thus interfering greatly with the patient's speech. After removal of the molar, by means of ordinary forceps with suitably guarded beaks, the bicuspid was forcibly rotated on its axis and pushed into the position of the extracted molar. On examination a year later, the tooth was somewhat loose, and the pulp was evidently no longer alive. Through a carious cavity entrance was obtained to the pulp cavity, the pulp *débris* removed, and the root canals and cavity treated in the usual manner by the immediate method. On examination some four months later the tooth was found to be much firmer, and in 1892, more than six years after the operation, was reported as doing well. As the patient promised faithfully to send me the tooth when it came out I believe it may be still in position.

The next slide represents the case of an undergraduate, aged 22, who desired extraction of two upper cuspids occupying a very irregular position within the palate, and the application of an artificial denture. On November 14, 1888, the right upper cuspid was luxated into position and retained by thin platinum wire and silk ligatures. On the following day the tooth was already discoloured, probably

from rupture of the blood-vessels of the pulp. On December 3 following, the left upper cuspid was similarly treated.

Just a month after the first of these operations the tooth was insensitive to thermal tests. On trephining the pulp, it bled freely, but was quite insensitive to the nerve instruments except towards the apex. The tooth was filled in the usual manner, and is reported now, more than six and a-half years later, as firm but discoloured. The left cuspid remained firm without discolouration for more than three years, but though it had later to be treated in a similar way to its fellow, it also still remains firm. With the improved methods of operation now employed, I believe even the discolouration from the loss of the pulps might have been avoided.

The next series of slides represents different views of a case in which five teeth have been luxated, thus rectifying an irregularity on the left side of the mouth by which both speech and appearance were very materially affected. The left upper molar was very badly decayed, and was extracted to give space for the re-arrangement of the five anterior teeth. The patient having been anaesthetised (nitrous oxide and ether), the molar was extracted, and after fracture of the alveolus between the teeth both bicuspid were luxated backwards by means of Physick's forceps. The cuspid and lateral incisor were similarly treated, all of them without detaching the teeth from their sockets. On endeavouring to luxate the central incisor, owing to a curved and distorted root, it slipped down between the beaks of the forceps, and although not removed from the bleeding socket, was practically extracted. As far as the curvature of the root would allow, it was forced into a fairly normal position. The teeth were ligated with thin platinum wire, and the parts painted with styptic colloid. The mouth was washed freely with an alcoholic solution of saccharin both before, and at least hourly, immediately after the operation. About three weeks later the ligatures were removed. As this patient is present for inspection, you may satisfy yourselves that, more than three years after the operation, all the teeth are sound, show not the slightest change in colour, and respond perfectly to thermal tests, although two at least of them were moved more than the length of their mesio-distal coronal diameters backwards, and the central incisor was completely dislocated from its socket.

The next case is very similar—extraction of the left upper molar, and luxation backwards of the two bicuspid, cuspid and lateral incisor. Two years and eight months afterwards the patient reports that the four teeth are doing well, and are all as firmly fixed as before the operation.

The next series of slides represents a case somewhat typical of a not uncommon irregularity found in adult life. The patient was aged 36, and required bridge work or artificial dentures. The utility of any such appliances is manifestly and seriously diminished should

some one tooth so interlock that the natural free movement of the jaws on one another is materially restricted. Two incisions with a circular saw revolved in the dental engine were made on each side of the left upper lateral incisor, which was then easily luxated into its proper position in the arch, and ligated as in previous cases. No anæsthetic was used, and the whole operation was completed in a quarter of an hour. Two and a-quarter years after, the tooth presents a perfectly normal appearance.

Other cases might be narrated, but these will suffice to show all the difficulties and the range of possible failures. With experience has come an improvement of operative methods, which will prevent the recurrence of many earlier failures. It is possible in most instances, by the circular saw and improved alveolar dividers, to move the tooth bodily with its periosteal and osseous investment, thus preventing unintentional extraction and auto-implantation, and in most cases subsequent death of the pulp.

I have only had one opportunity so far of operating on the lower jaw, under what I now know to be suitable conditions.

In the mouth of a healthy undergraduate, aged 21, the first lower molar, of which only the roots remained, was abscessed, and the second lower bicuspid was functionless from its being so twisted inwards that the masticating surface presented towards the tongue. On March 12, 1894, the molar roots were extracted, saw cuts made through the alveolus as deep as the saw ($\frac{1}{2}$ in.) would permit on the mesial and distal surfaces of the bicuspid, and the tooth raised from an angle of about 45° to an upright position. Part of the crown was disked and the tooth fixed with a double matrix splint. No anæsthetic was used, and the patient reported that the saw cuts did not hurt so much as the moving of the tooth and segment of bone, but the pain quickly subsided. The movement of the tooth required very considerable force, and from an ominous sharp click at the finish I suspected that the end of the root had been fractured in the socket. On dressing the case on the following day in the usual way, the patient reported his condition as quite comfortable. On the eighth day the splint was removed, and next day the crown was disked for the reception of a gold ferrule. On the fifteenth day, in excavating a carious mesio-coronal cavity which extended to the pulp, it was found that the pulp had shrunk in its chamber and was insensitive. Root canal treatment followed, and on the twentieth day a bridge, consisting of a gold cap on the bicuspid, connected by a masticating bar to a platinum gold anchorage inlay in a coronal cavity of the second molar, was cemented in place. Fifteen months after the operation the case was examined, when it was found that the bridge was firm and doing good service in mastication, and the surrounding parts quite healthy.

It is clear that improved, specially adapted instruments are advis-

able. Improved forms of mandrels with a square shoulder for enlarged circular saws, thin, but not so thin as to buckle, are required. Perhaps as generally a useful instrument as any would be a new alveolar separator, a kind of combination of the Physick's forceps, which is primarily a double elevator, and the ordinary surgical bone forceps.

No such operation should be conducted in an unclean mouth, therefore all the tartar should be removed, the gums should be in a healthy condition, and all carious cavities excised and filled before undertaking the operation. Direct action are much better than cable engines for such an operation.

It is clear that in many, if not most, of the cases narrated the apex has been moved. It should be noted, however, that in the later cases the aim has been to move the tooth in its socket, or the major part of it, with all its connections, periosteal and osseous, nervous and circulatory, relying on the well-known facility of repair in bone.

The pain attending an operation is always an important factor. It is, therefore, worth noting that in the majority of these operations, severe as they were, no anæsthetic was employed, which goes to prove that the operation, dreadful as it may sound, is not so terrible as it at first sight appears. In erupting teeth and simple cases the pain is very slight and of brief duration.

If, as I take it, the proper goal of the dentist is to maintain and restore, when lost, the functional integrity of the denture as a physiological unit of the greatest importance, he must admit that the immediate method, while in no way supplanting older methods with their greater safety, does fill a niche not previously occupied, since it gives us a reliable method of treatment where mechanical means are out of the question, owing to the best age period having been passed without rectification of the irregularity, or still more, owing to the inability of the patient to command the means of obtaining what must remain much more costly treatment.

For, after all, what is the worst that can happen in all well-conducted cases, but the death of a tooth pulp? Surely a pulpless but well-treated tooth, even if it have lost much of its natural colour, arranged in symmetrical array with its fellows, duly articulating and not interfering with them, is better, much better, than one in all its pristine beauty out of the arch, and interfering with efficient mastication.

The PRESIDENT said Mr. Hern, who had treated some cases of instanding front teeth by the immediate method, had sent models of one case. The teeth had since been tried by the heat test and at once responded, thus proving the vitality of the pulp. Although Mr. Hern deprecated immediate treatment in many cases, he thought they were perfectly justified, under certain circumstances, in adopting that method. If the patient was operated on before the teeth had fully

erupted, and there was no downward dislocation of the tooth to be moved, the risk of killing the pulp was small.

Mr. KIRBY showed a model of a case not yet completed. It was that of a lady over 30 years of age, in which the means hitherto used to reduce a deformity caused by an instanding lateral had not been successful. She was very anxious to have the operation of luxation performed, and there could be no doubt as to its success. The worst that could happen would be the death of the pulp.

Mr. J. H. BADCOCK said since the paper was read he had tried the operation in two cases. The first was that of an instanding canine. As far as pain went his patient, who was rather nervous and sensitive, assured him that she felt nothing whatever of the saw cut. The pain of moving the tooth was much the same as in extraction, but it could have been done painlessly if he had been able to inject sufficient cocaine. The tooth was tied with silver wire to the central. Sensitiveness soon passed off, and on the removal of the wire the tooth was retained *in situ* simply by its position outside the bite. The tooth was now nearly as firm as the other teeth. The second case was that of a boy with two outstanding upper canines and an instanding second bicuspid. The two first bicuspids were removed, and the second bicuspid brought out into line. It was tied with wire to the canine and first molar. There had been no pain or inconvenience. The tooth was at present slightly loose, but it was alive and in good position.

Mr. CUNNINGHAM said Mr. Paterson, who had some experience in this operation, being unable to be present had sent some notes of cases. In the first case, that of a girl aged 22, an instanding lower second bicuspid was placed in a vertical position, a temporary splint of Stent's composition being used until a vulcanite plate was made. After six weeks the patient was discharged with the tooth firm and no pain during mastication. He mentioned one case which had been a failure, and after nine days the tooth was removed. He had an upper lateral case now in progress fairly promising. The conclusions drawn by Mr. Paterson were that it was too early to discuss such work; that unless the alveolus was softened by preceding periosteal inflammation there was risk of fracturing the tooth. Mr. Cunningham added that since reading the paper he had had an opportunity of operating on a lower incisor, and exhibited models. He also showed a pair of Dr. Bryans' forceps. Dr. Bryans had adopted the method of sectionising a portion of the alveolus carrying the tooth with a portion of the periosteal and osseous attachment. He had never had an opportunity of using the forceps, but in certain cases no doubt the plan would work well.

Mr. F. J. BENNETT said the operation as developed by Mr. Cunningham was a distinct advance on the earlier method. The introduction of the saw cut was distinctly scientific, and the fact of

holding in view the importance of keeping intact the periosteum and the vascular supply to the teeth, was another great advance. He hoped they would keep an open mind and not be eager to condemn an operation which might have a great future before it.

Mr. ALBERT thought such cases as those adduced could scarcely be pronounced successes until a period of at least two years had elapsed.

Mr. E. LLOYD-WILLIAMS, in offering one or two criticisms upon the paper, referred to the possible danger in the operation of fracturing the tooth or of the death of the pulp, either of which was a serious matter, especially in the case of good-looking young ladies. There was also an absolute danger of septic infection, and if any serious surgical trouble arose in consequence they would certainly repent not adopting perhaps a longer, but certainly a much safer, method. In the plaster models the contour of the alveolar surfaces had been very carefully restored by the modellers, but was Nature going to restore the contour of the alveolar surfaces in the same way? Mr. Nicol had ventured to proclaim the very heterodox pathological opinion that the union of a fragment which was fractured was a bony one, but he (Mr. Lloyd-Williams) had always been taught that union by bone never took place in the upper jaw, and he had never come across a case confirming Mr. Nicol's statement.

Mr. SIDNEY SPOKES said nothing had been advanced against the little operation he had mentioned at the last meeting. Since then he had moved altogether sixteen incisors, and though the two years' test could not yet be applied they were all alive and flourishing.

Mr. HUMBY thought none of the cases mentioned such as could not have been regulated by the so-called classical method, if properly applied.

Mr. A. E. BAKER asked if Mr. Cunningham would move projecting teeth inwards.

Mr. CUNNINGHAM said that was an operation he had never yet done. He had thought it all out, and on the basis of past experience had reasonable hopes of success. He admitted a fractured tooth was a possible danger of the operation, if done in a careless and unscientific way. As to the death of the pulp, he thought that in the case even of the prettiest girl Mr. Lloyd-Williams had ever seen, a canine in the proper position, though the pulp was dead, was preferable to a living tooth displaced and instanding. He admitted the possibility of septic infection if the operation was performed in cases where the teeth were encrusted with tartar. The mouth should be cleaned before the operation was attempted. He had not the requisite knowledge to say whether the union referred to was bony or fibrous, but his impression was that there was bony union. With regard to the contour question, Nature was, no doubt, the great artist in plastic operations, and they had to leave very much to Nature. In reply to Mr. Humby, he said they

could not get over the fact that the regulation of teeth by the older mechanical means had sometimes failed, and, without wishing to press it as a method of treating all irregularities, he put this forward simply as a new operation, enabling them to treat cases which hitherto they had not been able to treat successfully.

On the motion of the PRESIDENT, the thanks of the Society were accorded to Mr. Cunningham and Mr. Sidney Spokes for their communications.

The next meeting will take place on Dec. 2.

MISCELLANEA.

ACUTE PERICEMENTITIS.—For acute pericementitis Dr. Harlan suggests the following as a useful mode of treatment in certain cases. Administer one-tenth of a grain of calcium sulphide every ten minutes during the first hour, every fifteen minutes during the second, and every half hour during the next two or three hours. The following should then be prescribed and taken, one half at about 5 o'clock in the evening, and the other half at about 10 o'clock the following morning.

R_x Acetanilid gr. viii.
Syr. simple ʒij.
Spr. frumenti. ʒij.

FERRIPYRIN AS A HÆMOSTATIC.—This preparation is said by Mr. Frohmann of Berlin, to be an excellent remedy in the treatment of alveolar hæmorrhage. It also possesses analgesic as well as hæmostatic properties, and is said to materially assist in allaying the pain which sometimes follows extraction of the teeth.

MICA AS A MATRIX MATERIAL.—W. S. How, in *Dental Cosmos*, states that an oiled mica matrix, by virtue of its extreme thinness, smoothness, flexibleness, resistance to acid actions and shapability with scissors, to say nothing of its cheapness, leaves little to be desired of a readily applied matrix. It may be ligated or otherwise secured around the tooth; as, for example, by heat-softened gutta-percha pressed

against it on either side between the teeth. With due care in adjusting the matrix, no subsequent finish will be required. The elasticity of the mica matrix suggests discretion to avoid its accidentally springing into the mouth, and its friability renders caution requisite to prevent the leaving of broken pieces between the teeth.

FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the October meeting of the Examiners the following Candidates passed the First Dental Examination:—Robert Black, William K. Carew, Robert A. Dickson, Sydney R. Excell, George Fisher, Robert S. Grant, Wm. M. Irving, J. Burns Watson. Seven Candidates were referred. At the same period the following Candidates passed the Final Examination, and were admitted Dental Licentiates:—David Dathl Davies, Llanwrst; George Fisher, Hessle, Hull; John Campbell McCrindle, Glasgow; Robert Willcox, Bristol. Three Candidates were referred.

DISCOVERY OF THE REMAINS OF PROBOSCIDIANS.—A discovery of great value has taken place in a sand pit at Pilloux in the Clarente. The find includes the remains of the mammoth, rhinoceros, hippopotamus, buffalo and several gigantic elephants, while in addition to the animal remains, and mixed with them, were a large number of cut flints.

A METHOD OF CLEANING IMPRESSION TRAYS.—A method of cleaning impression trays is given in *Items of Interest*. Give the impression trays a coating of sweet oil with a woollen cloth dipped in the oil. Put them in strong soap suds (made with soap shavings or powder), boil and wipe dry. Now polish with whiting by using a soft woollen cloth, or fine leather. In this way trays can be kept bright and clean, and the plaster will not adhere to them.

AN ARTIFICIAL LEATHER.—The following recipe for making artificial leather is given in the *Revue Industrielle*:—Take vegetable parchment and roll it while still damp with paraffin, wax and stearine, adding a little glycerine and chloride of calcium to ensure suppleness, then dry, size and varnish.

A METHOD OF WELDING LEAD.—A successful method of welding lead has been devised by Mr. Blondel. The surfaces to be welded are carefully cleaned, and a layer of lead amalgam is placed between them. An ordinary soldering iron is then passed over the edge, with the result that the mercury is vapourised and the freely divided lead fuses and unites the surfaces.

THE Annual Dinner of the staff and past and present students of the Dental Hospital of London and their friends will be held on Saturday, November 30, at the Café Royal, Regent Street. Frederick Canton, Esq., L.R.C.P.Lond., M.R.C.S., L.D.S.Eng., in the chair. In order that perfect arrangements may be made it is earnestly requested that gentlemen who can be present will send in their names at their earliest convenience, stating also if it be their intention to bring friends. All communications respecting the dinner should be addressed to the Dean of the hospital.

DENTAL HOSPITAL OF LONDON BUILDING FUND.—The following new donations have been received for the building account of the new Dental Hospital of London, Leicester Square, since the last list published in the Journal:—

Mrs. Myers ...	£1	1	0	F. Richardson, Esq. ...	£2	2	0
Mrs. S. J. Simpson ...	1	1	0	R. B. Littell, Esq. ...	21	0	0
John Corbett, Esq. ...	1	1	0	Rev. S. J. Simpson ...	1	1	0
Captain H. B. Murray ...	10	10	0	G. C. McAdam, Esq. ...	10	10	0
Mrs. Breitmeyer ...	5	5	0	Miss Everest ...	5	5	0
Andrew Lawson, Esq.,				Mrs. Herbert Lusada ...	1	1	0
J.P. ...	1	1	0	Donation Box at Hos-			
Dr. John Tatham ...	1	1	0	pital ...	3	8	7
Mrs. Alexander... ..	1	0	0	Dr. Ford Anderson ...	1	1	0
T. D. Eden, Esq. ...	1	0	0	Miss Olding ...	10	10	0
Miss Deedes ...	1	11	6	E. H. Mountford, Esq. ...	1	1	0
John Birkett, Esq. ...	1	1	0	Mrs. Proctor ...	1	1	0
Miss A. Bonham Carter	10	0	0	Lady Monkswell ...	1	1	0
James Adeney, Esq. ...	1	1	0	Miss H. Barry ...	2	2	0
A. Murray Smith, Esq. ...	1	1	0	Mrs. H. Bonham Carter	1	1	0
William Penn, Esq. ...	5	0	0	Henry Maudsley, Esq. ...	1	1	0
Mrs. Henry Whiting ...	5	5	0	F. Braby, Esq. ...	1	1	0
Mrs. Rogers ...	1	1	0	Mrs. C. A. Lawrence ...	1	1	0
Leopold de Rothschild,				Miss Ethel B. Pink ...	10	10	0
Esq. ...	10	10	0	Messrs. Savory & Moore	10	10	0
Mrs. R. Fleming ...	50	0	0	Alfred Coleman, Esq. ...	10	10	0

ODONTO-CHIRURGICAL SOCIETY.—The first ordinary meeting of the Odonto-Chirurgical Society (Session 1895-96) was held

in the Rooms, 31, Chambers Street, Edinburgh, on Thursday, November 14, at 7.30 p.m., Mr. J. Stewart Durward, L.D.S., President, in the chair. William Desbrassey Woodburn, L.D.S.Glas., was elected a member of the Society. Mr. Macleod showed a case of gemination in connection with the third molar. The President gave an address on "Porcelain Inlays and All-porcelain Crowns (Downey's method)."

THE HUXLEY MEMORIAL.—The Prince of Wales has been pleased to become President of the Committee of the Huxley Memorial. There are many well-known medical names on the list of the General Committee, among them being Sir Henry Acland, Professor Clifford Allbutt, Dr. Bastian, Dr. Beddoe, Sir Wm. Broadbent, Sir Richard Quain, Professor Gairdner, Dr. Champneys, Sir Joseph Fayrer, Sir Wm. Flower, Professor Michael Foster, Sir Russell Reynolds, Mr. Ernest Hart, Surgeon-General Hooper, Mr. Jonathan Hutchinson, Professor Klein, Dr. McLeod, Sir Douglas MacLagan, Dr. Ransome, Sir Wm. Roberts, Dr. Semon, Sir Wm. Turner, Sir Henry Thompson, Mr. Tomes, Sir Spencer Wells, Dr. Brunton, Dr. Ferrier, and many others.

THE Lord Chancellor has appointed Mr. J. Morley Dennis, F.L.S., a Justice of the Peace for the Borough of Grimsby.

APPOINTMENTS.

J. GRAHAM MUNRO, L.D.S., to be Dental Surgeon to the Edinburgh Dental Hospital.

FRED. J. TURNBULL, L.R.C.P. & S., L.D.S., to be Assistant Dental Surgeon to the Edinburgh Dental Hospital.

H. J. THOMAS, L.D.S.I., to be Dental Surgeon to the Swansea Training College.

M. YEATMAN WOOLF to be Hon. Dental Surgeon to the Training Home, West Hampstead.

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our correspondents.

Lady Members.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I believe that on the strength of Bye-law 1—"a person who is registered in the Dentists' Register shall be eligible for election as a member of the Association, provided that *he* be of good character," &c.—the Scottish Branch has elected a lady practitioner to the membership of the Association, and that the executive members of the Representative Board have taken legal advice and accepted the elect of the Scottish Branch. The authority for this innovation is the dictum that a "person" may be either a male or a female. Allow me to state briefly why I think that Scottish infallibility and legal acumen are equally at fault in their conclusions.

The French, in their familiarly logical method, say "a door *must* be either open or shut." Doors may be either open or shut, but a door has no such alternative. Now if we apply this French legal axiom to the word person it will help us to see our true position. I agree with the assertion that a person may be either male or female, but I cannot conceive that a person can be both. We must, therefore, look to the Bye-laws of the Association for our definition of the word person as applied to membership of the British Dental Association. When the word is used as an impersonal substantive, its pronoun is "it," just as we say a child is "it" when we do not specify its sex, but when we specify sex for the purposes of definition or recognition we use *he* or *she* accordingly. Now, sir, from paragraph 6 of the Memorandum, on through the Articles of Association and through the Bye-laws, the male designation *he*, *his*, and *him* are the terms used in referring to the members of the Association and to their duties and liabilities. Unless, therefore we are prepared to read *she* for *he*, *her* for *him*, *chairwoman* for *chairman*, *gentlewoman* for *gentleman*, *editoress* for *editor*, and so on, I am driven to the conclusion that the election of the lady member according to our Bye-laws is a mistake.

But even if I take a more moderate view of the transaction, it is obviously a reading of the Bye-laws which ought to have been submitted to the whole of the members, and not acted upon by a numerically small portion of the body corporate. Bye-law 32 read with an unbiassed mind will, I think, point to this conclusion, even if courtesy be unconsidered.

If any (male!) member of the British Dental Association saw a series of Articles and Bye-laws similar to ours with the words *she*, *her*, &c., used throughout, I imagine that it would require a lot of persuasion to induce him to apply for membership, for a man may not lightly cast aside the personality of his sex; and I think, sir, that the precipitancy of the Scottish Branch has landed the British Dental

Association in a kind of dilemma, and has placed their *protégée* in an invidious and illogical position.

Please note that in writing thus I am not in any way prejudicing the question of lady members. If lady members be desirable the position can be arrived at in an orderly manner and not by a rush.

Yours obediently,

FISSURE BUR.

BOOKS RECEIVED.

THE INTERNATIONAL JOURNAL OF MICROSCOPY AND NATURAL SCIENCE (vol. v. part 28, third series), October, 1895.

GUIDE TO THE MEDICAL AND DENTAL PROFESSIONS, by Percival Turner. *London*: Baillière, Tindall & Cox, 20 and 21, King William Street, Strand, W.C.

HANDELINGEN VAN HET NEDERLANDSCH TANDHEELKUNDIG GENOOTSCHAP.

The Pharmaceutical Journal, The Chemist and Druggist, The Medical Press and Circular, The Dominion Dental Journal, L'Odontologie et la Revue Internationale d'Odontologie, Birmingham Medical Review, Guy's Hospital Gazette, Revue Internationale de Médecine et de Chirurgie Pratiques, The Dental Cosmos, The Dental Practitioner and Advertiser, Medical Reprints, The Ohio Dental Journal, La Odontologia, Revue Odontologique, The Dental Digest, Le Progrès Dentaire, Programme de l'enseignement et des Conditions d'Admission à l'Ecole dentaire de Paris, Deutsche Monatsschrift für Zahnheilkunde, Items of Interest, Correspondenzblatt für Zahnärzte, Skandinaviska Tandläkareföreningens Tidskrift, The Dental Record, British Journal of Dental Science.

Letters and other Communications received from:—

Vernon Knowles ; D. Alexander ; J. Butterworth ; Secretary of the Faculty of Physicians and Surgeons of Glasgow ; Kelly & Co. ; H. Macphail ; A. Hopewell Smith ; Edward A. Manton ; T. A. Goard ; S. Wormald ; J. F. Pink ; A. E. Donagan ; H. J. Thomas, E. M. Tod ; Charters Birch ; John Thomas ; M. T. Woolf ; The Birmingham Dental Students' Society.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

SPECIAL NOTICE.—All Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, W.

THE JOURNAL
OF THE
BRITISH DENTAL ASSOCIATION
A
MONTHLY REVIEW OF DENTAL SURGERY.

No. 12. DECEMBER 16, 1895. Vol. XVI.

The Medical Council.

THE address of the President at the opening of the recent session of the Medical Council does not seem to have awakened much interest in the medical profession generally. The long account of their building operations seems to show that the Council or its management has the same facility for getting into difficulties in this direction as it has in managing other matters with which it is supposed to be more familiar. In this instance, however, its astute legal adviser has not been able to appear as the *Deus ex machina*, and rescue it from a false position ; hence both expense and inconvenience have followed on error. To an ordinary mind it would seem that if extensive buildings were necessary another site might have been found affording better accommodation at a less cost. The Council has no wares to bring before the public, it need not tout for

custom, and its clients are bound to seek it out wherever it may be ; but at present clerks' offices and a porter's room occupy the front space in one of the most expensive streets in London. We shall be curious to see if the dental fund will be called upon in this latest expenditure.

According to the second part of this address, the Council seems as anxious as ever to avoid taking legal proceedings against those who infringe the medical enactments as they now stand, except in such rare cases as have recently arisen, both in the medical and in the dental world. In this we think there is exercised a wise discretion. A Council meeting twice in the year, whose affairs are managed in the interim by responsible committees, is in the nature of things a lame and sluggish prosecutor at the best, and the proverbial "law's delay" finds a certain refuge in such circumstances.

The remainder of the address consists of an admonition to the medical profession to rest content with things as they are, and the President draws a black and white picture of the Incorporated Law Society and the fees paid by solicitors, in support of his grave advice, and winds up by quoting some eulogistic remarks of Lord Russell ("a most eminent judge and a Liberal beyond question") anent the Medical Council and medical education. Now, however interesting it may be to see two Irishmen agreeing on a question which concerns the three kingdoms, we think that it would be more seemly for the President of the Medical Council to look for approval from the members of his own profession, and we venture to point out that there are Liberals "beyond question" at present on the Medical Council who would be slow to paint their admiration of it in the same colours as either the President or the eminent judge.

The treatment received by the self-invited deputation

from the Dental Assistants' Association was such as might have been expected from an assembly making any pretension to self-respect. First, the great self-invited were ordered to withdraw, and then they were told that the hand could not be put back on the dial at their special request.

The report of our Inspector, Mr. C. S. Tomes, F.R.S., on the qualifying examination in dentistry by the Faculty of Physicians and Surgeons of Glasgow, was not allowed to be put on the minutes, and the objections to its insertion were stated at some length by Dr. Cameron, who, strangely enough, was allowed to traverse some of the most important observations of the Inspector. At the conclusion of his *ex parte* speech Dr. Cameron says: "I think it undesirable to make these statements public property." Our readers will see for themselves how far they have become public property, and by whom they were published. We are quite content to leave Dr. Cameron and the Faculty of Physicians and Surgeons of Glasgow in the hands of our Inspector, and to abide by the results, but we must protest against this covert public defence of "a very serious charge" before ever it has been made public; and we do not think that fair play should suffer even although trains may be late, or though people have neglected to make allowances for such contingencies.

In the case of Joseph Stromier, brought before the Council by our Hon. Secretary, the want of information on the part of Dr. Cameron again stood in the way of the Council taking action. Perhaps if our Hon. Secretary had been called, a few words from him might have saved much time and trouble. At least we assume that our Hon. Secretary would not have made such a circumstantial statement on anything but sufficient grounds. The result

of the first attempt of Mr. Stromier to ride home on his foreign curriculum does not seem to have been successful; this is, so far, gratifying, inasmuch as it in a measure justifies, if such be needed, the action of the Medical Council, taken two years ago in reference to the pretentious prospectuses of foreign dental colleges as compared with the more modest, but more efficient, announcements of our home institutions.

We observe with regret that a case of covering sent in to the Council, or to the Dental Committee, more than a year ago, has been again put back, and this, through no laxity or insufficiency on the part of our Hon. Secretary, but for some reason or another which seemed sufficient on the part of those who are concerned in arranging the business of the Council. We consider that this delay is both needless and improvident. It is disappointing to those who expend time and money in getting up a case, and it is according to all experience sure that the leisure time or the favourable opportunity which is looked for seldom or never comes until too late for any good purpose.

The vote of thanks to the Council sent in by the Midland Branch must be a surprise to the members of the Representative Board, and to such members of the Association as take the trouble to read the reported proceedings of the Board given in our pages. At a meeting of the Board held on July 28, 1894, a resolution similar to that which has been sent in by the Midland Branch was rejected by the Board as being uncalled for, only two members voting in its favour. This, however, does not seem to have been sufficient for some members of the Midland Branch, for the decision arrived at after what seems to have been an informal meeting following a Council meeting of the Branch has been acted upon, and the resolution in question has been sent in to the Medical

Council. It would be interesting to know how many members of the Branch voted for this action, and how many of the voters were members of the Branch Council. We make no comment on the ridiculous position in which the whole Association is placed, and how it takes away any influence which the Board may possess, and encourages the assumption that if the properly appointed executive of the Association cannot secure the confidence and support of its constituents, its representations may well be disregarded by other bodies as valueless. On speaking with a gentleman whose name occupies a prominent position on the notice of the vote sent to the Council, we were assured that he knew nothing about it until he was called upon to give us a little information upon the subject. Surely this is very like a revival of the "Three Tailors of Tooley Street." In the midst of all this, both the British Dental Association and the Medical Council must continue to work at a great disadvantage while the dental profession is not represented on the Council. We are quite convinced that the Council, individually and as a whole, mean well to us and to the Dentists Act, but that their best endeavours on our behalf will ever be more or less defective while they work in the dark, or by the borrowed light conveyed to them by outside interviews, or by instructions from officials who are almost as unenlightened on dental affairs as they themselves, and who sometimes see things as they wish to see them, rather than as they are.

EDINBURGH DENTAL STUDENTS' SOCIETY. — The Sixth Annual Dance of the above Society was held on Friday, December 6, in Messrs. Aitchison's Assembly Rooms, Queen Street, about fifty-six members and friends being present. Mesdames MacLeod, Stewart, Durward and Mackintosh were chaperons; Mr. D. Robertson Campbell (house surgeon), acted as M.C., and Messrs. Simmons, Malcolm, J. Morris Stewart and Walkinshaw as stewards.

Recent Trials.

UNDER the heading of Legal Intelligence we publish accounts of three cases of interest, in which the law has upheld as freely as could be desired the spirit of dental legislation.

The Strand barbers' case has been the means of attracting a large amount of public attention to the distinction which exists between the qualified and unqualified practitioner, and so, as a salutary lesson has been administered to the offenders, cannot but be productive of lasting benefit. Although the prosecution was not instituted under the Dentists Act our executive had the case watched on our behalf, and was ready to have put the Dentists Act into force in the event of an acquittal in the first instance.

The case is an astonishing example of the success with which a large section of the public may be imposed upon.

The West Ham case is noteworthy as an example of a successful prosecution initiated by a private individual against an unregistered practitioner. Although a failure is equally undesirable, whether the proceedings are undertaken by the Association or by an individual practitioner, yet the responsibility of the former is much greater than the latter, and the freedom of action belonging to the individual gives him a great advantage over our executive, whose proceedings are closely watched and criticised, and who are accountable to the Association for all they may do.

Lastly, there is the case of *Comer v. Gwynne*, in which the plaintiff sought to recover a fee which Mr. Justice Mathew pronounced to be exorbitant. The work done was a bridge carrying three teeth—two bicuspid and a molar—and attached by pins in the two bicuspid roots and by a crown on the molar beyond, for which a hundred guineas was charged.

It was hardly disputed that the charge was unusual, but an attempt was made to establish the existence of a contract by the exhibition of a pamphlet which contained a reference to the fees charged, a contention which was turned inside out by the judge.

The perusal of this case, which ended in a verdict for the defendant with costs, the plaintiff being allowed the amount paid into court, will be instructive and will go far to open the eyes of the public as to the methods pursued by some of those who set up the preposterous claim that modern dentistry is a thing of one country, rather than of the world.

ASSOCIATION INTELLIGENCE.

The Honorary Secretary of the Association desires to emphasise the statement he has on several occasions previously made, viz., that anonymous communications relating to cases of irregular practices, or alleged infringements of the Dentists Act, cannot receive from him that attention he would wish to bestow upon them, or they may deserve.

Representative Board.

THE following letter relating to Bye-laws 15 and 18 has been sent to the Branches of the Association. The question of alteration of these Bye-laws will come up for consideration at the Annual General Meeting to be held in London in August next.

Non-members of Branches may communicate their views on the question to the hon. secretary of the British Dental Association within the period named in the letter.

40, LEICESTER SQUARE,
LONDON, W.C.,

November 20, 1895.

DEAR SIR,—At the Annual General Meeting of this Association, held in Edinburgh in August last, the following resolution was passed, viz. :—

“That Bye-law 15, and all other Bye-laws bearing upon the same, be remitted to the Representative Board, for them to communicate with the Branches and invite opinions thereon, and to report at the next Annual General Meeting.”

I am directed by the Representative Board to put you in possession of such information as the minutes of the Board give. I therefore enclose a printed

extract from the minutes of the Board, explanatory of the history of the various proposals that have been made from time to time for the alteration of the Bye-law, with their results, and I have to request the favour of a reply from your Branch before March 1, 1896, at latest.

Yours truly,

W. B. PATERSON,

Hon. Secretary B.D.A.

Bye-law 15 now reads :—

REPRESENTATIVE BOARD.

“The Representative Board shall consist of the President, President-elect and Vice-presidents of the Association, and of at least 40 Members, including the President and Vice-president of the Board, the Treasurer, the Hon. Secretary, and the President and Hon. Secretary for the time being of each Branch of the Association.”

Bye-law 18 now reads :—

“After the Members of the Representative Board, elected by the unincorporated body called by the same name, at a meeting held on March 3, 1879, have held office for two years, ten Members of the Board, selected by the Members of the Board, shall retire annually. The vacancies thus created shall be filled up by the Members of the Association at the Annual General Meeting, from such of their number as have been nominated by not less than six Members of the Association; but Members resident in districts or in towns fully represented by branches of the Association, shall be nominated by such branches of the Association at the request of the Representative Board; the nominations to be forwarded to the Hon. Secretary not less than one month before the Annual General Meeting. Retiring Members of the Board shall be eligible for re-election.”

Extracts from the Minutes of the Representative Board.

On April 2, 1892 :—

The following resolution was passed, viz. :—“That in the opinion of the Representative Board it is desirable that the Branches should have the power of electing Members of the Representative Board, instead of merely nominating candidates for election, and that the Business Committee be requested to frame a Bye-law on these lines and submit it to the next meeting of the Board, with a view to its being brought before the Annual Meeting in August next.”

On June 11, 1892 :—

It was proposed, *pro forma*, by the President, that the following propositions of the Business Committee be received and adopted, viz. :—“That Bye-law 15 read as follows” :—

REPRESENTATIVE BOARD.

“The Representative Board shall consist of the President, President-elect, Vice-Presidents, the Treasurer and the Hon. Secretary of

the Association, the President and Vice-president of the Board, the President and Hon. Secretary for the time being of each Branch of the Association, and of Members elected by the Branches, and Members elected by the Association."

"That Bye-law 18, as at present known, be cancelled, and a new Bye-law be framed, to be called Bye-law 16. The present Bye-laws 16 and 17 to be in future known as 17 and 18 respectively."

NEW BYE-LAW 16.

"Each Branch shall be entitled to *elect* two representatives to the Board annually.

"The Association shall elect *twelve* representatives to the Board annually, each of whom must be nominated by *three* other Members from personal knowledge, and all to be eligible according to the Bye-laws. Such nominations must be received by the Hon. Secretary not less than thirty days before the Annual General Meeting, and if necessary, the Secretary shall issue a voting paper and the vote shall be taken by ballot, as may be arranged by the Representative Board.

"All representatives shall hold office from the end of the Annual General Meeting at which they are elected, until the end of the following Annual General Meeting of the Association.

"All retiring representatives shall be eligible for re-election."

"After considerable discussion the previous question was moved in order that the matter might be shelved indefinitely; this was carried by 17 votes to 9."

As a result of this decision a Member then gave notice of motion to rescind the words "Nomination of Candidates by Branches wherever the same appears in the Bye-laws."

On August 11, 1892:—

This motion was by leave withdrawn, owing to lack of time in which to adequately discuss it.

(N.B.)—Reports of discussions upon the matters referred to in the above-mentioned excerpts will be found in the April and June numbers of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION for 1892.

Midland Branch.

DISCUSSION ON DENTAL EXAMINATIONS AND ADVERTISING PRACTITIONERS.

THE autumnal meeting of the Midland Branch of the British Dental Association was held on Saturday, October 26, at Preston. Tea was served at the Bull and Royal Hotel, and afterwards the evening was spent in discussing, in the Council Chamber of the Town Hall,

the papers read at the annual meeting of the branch at Hull, on June 21, and published in the September issue of the JOURNAL OF THE BRITISH DENTAL ASSOCIATION. Amongst those present were: Messrs. G. Brunton (Leeds), R. Edwards (Liverpool), W. Broughton (Eccles), W. J. Pidgeon (Bootle, Liverpool), W. A. Hooton (Manchester), J. H. Carter (Leeds), F. E. Cutts (Lancaster), R. M. Capoa (Liverpool), N. Miller (Preston), A. B. Wolfenden (Halifax), T. Jackson (Burnley), P. Headridge (Manchester), G. O. Whittaker (Manchester), F. Rose (Liverpool), C. B. Dalby (Manchester), C. J. Cowell (Preston), T. Mansell (Birkenhead), Thos. Gaddes (Harrogate), David Headridge (Manchester), Frank Harrison (Sheffield), P. A. Linnell (Manchester), John Worsley, W. S. Sugden, Charles Jackson (Preston), F. W. Minshall (Salford), G. G. Campion (Manchester), and I. Renshaw (Rochdale) (Sec.). In the absence of the President Mr. J. C. Storey, Mr. BRUNTON, having previously held the office, was elected to the chair. The papers referred to in the discussion were: "What the British Dental Association has done for the Dental Profession," by I. Renshaw, L.D.S.I.; "What the British Dental Association ought to do for our Profession," by T. Gaddes, M.D.U.S.A. L.D.S.Eng. and Edin.; and "How the British Dental Association can help the Public to better Dental Service," by T. E. Constant, L.R.C.P.Lond., M.R.C.S., L.D.S.Eng.

The CHAIRMAN expressed his pleasure at meeting the members, and said his first duty was to move a vote of condolence to Lady Tames on the death of Sir John Tames.

Mr. RENSHAW seconded, and the motion having been carried unanimously, the secretary was requested to write to Lady Tames, conveying this expression of the Association's sympathy.

The CHAIRMAN said the discussion of these papers seemed to him to indicate a very healthy condition of the Association, and especially of the branch. One could not quite understand the work of the organisation without going through the records of past meetings, but it seemed to him that if the British Dental Association had not existed, and its work had not been done, the profession, even at present, would have been in a very chaotic state.

Mr. CAMPION, in opening the discussion, said: Mr. Renshaw's paper of course, was mainly historical, and he did not think there was much to be said in criticism of it, though it occurred to him that he perhaps exaggerated somewhat the effect which the Association had had in introducing some of those things to which he referred. He spoke, for example, of a number of books on diseases of the teeth, and other subjects connected with the speciality, which he very largely attributed to the influence of the Association. He should rather put it that these works were, with the Association itself, the outcome of the very great increase of education, and that of the number of men who were devoting themselves to dentistry. He should not put them in the

relation of cause and effect, but should say that they were both together the effects of some deeper cause. Passing on to the papers of Mr. Gaddes and Mr. Constant, there they had to deal with matters which would come before them in the future, and many of these subjects, he was sure, they would feel needed a very great deal of careful discussion before they could take action upon them. Turning to Mr. Gaddes' great point, that about the possible action of the Association, in bringing an end to the advertising practitioner, he could only say that he was quite in agreement with the writer in the statement he put forward, that they could not expect the Association, no matter how it worked or what it did, to make an end of these men. The Association had been in existence for fifteen years, and during that time it had been working—some said, not hard—but at any rate carefully and quietly, and they saw now that the result was very small indeed, for advertising men were increasing, and that, although reputable practitioners were also increasing very rapidly, still, they could not fix a time when they could expect to see the advertising practitioner disappear; and whether the Association itself could do very much in this way, he for one very much doubted. He did not want to be pessimistic, but he did think the optimistic views held by some members of the Association a few years ago, and perhaps held now by some, were altogether too sanguine. Another point upon which he should like to touch at greater length, and which interested him very much because it was a timely one, was the question of changing the examinations in such a way that students had to pass one in mechanical dentistry before entering the hospital. That was a question which had been talked about and thrashed out over and over again. It had been discussed at the annual meeting of the general Association, and a resolution had been passed urging it, and referred to the Representative Board, and the Representative Board had done nothing. He, for one, deeply deplored that, and he alluded to the point, not because he thought the Board would be likely to take any action as the result of any discussion they might have that night, but because he thought it was a gain to keep such matters, upon which they were all practically agreed, aired, and he hoped that those members of the branch who were on the Board would not allow the matter to be laid aside. The Board declined to take action because the Medical Council had appointed an assessor who was to visit all examinations, and to report upon them to the Council. Pending that report by Mr. Tomes, the Board decided not to take action. When that report was likely to be forthcoming he did not know, but he hoped that when it had been made, those members of the Board who represented the branch would take care that the subject was thoroughly discussed.

As to Mr. Constant's paper, he found one point to which he personally took considerable exception. Mr. Constant urged that the standard of preliminary examination should be raised. That he

thought a laudable view. There was no doubt—he saw it constantly himself, having to deal with students—that a great many of the students were deficient in their powers of learning, they might say that their preliminary education would be very much better if it had been more extended, more thorough; and he held with Mr. Constant that if they were going to raise the standard of examinations they should begin at the beginning and raise the standard of preliminary examination, but he did not at all sympathise with Mr. Constant when he said: “In the first place, it will ensure it the services of a better educated class of dentists than the present. Secondly, it will prevent that keen competition which, however much it may benefit trades, always tends to degrade professions. There is no profession the members of which are so beset with temptations to stray from the path of duty, as are the members of our own. It is therefore very important that undue competition should not render that path more thorny than it is at present. The dentist who finds it a severe tax upon his moral nature to fill the roots of an upper second molar for two guineas might resort to rhizodontrophy if stress of competition reduced his fee to half-a-crown, and the public would suffer accordingly.” It seemed to him, Mr. Campion continued, that this was an exaggerated view and that it involved a misconception of the place the profession held in the economy of things. It regarded the profession too much from an internal and selfish point of view. They were to consider, when Mr. Constant talked about payment of two guinea fees, it was really only a small percentage of the public who could afford it. The majority of people could not afford to pay what many dentists considered adequate fees for really good dental services, and in considering the question of the restriction of members of the profession, they had to remember not simply themselves, but all members of the public as well; that, it seemed to him, had a very great bearing on the question of advertising. Take the number of dentists in fairly well-to-do practices, who could demand adequate fees for their work, and take the people whom they supplied, and there was a very large residuum of people of the lower classes who could not afford what was regarded as proper remuneration, and who, in consequence, were driven to advertising dentists and the quack. This was a point which he thought they were rather apt to overlook. These people, if they could not have decent dental service at a figure which they could afford, must go to men who would give them what attention they could, and they thus fell, practically into the hands of the advertising men. He believed that the advertising question was largely bound up with the adequate supply of good dentists to the public, that until the number of dentists was very much greater than it is at present, there must inevitably be a large practice for such men, so that practically it was the only way in which the lower class could get any attention at all. Obviously, if that was so, then advertising must pay, and to return to the point he had alluded to, it

was absolutely hopeless for them to expect to get rid of it at any time they could name.

The CHAIRMAN then read the following communication from the President :—

GENTLEMEN.—I deeply regret that it is impossible for me to attend the meeting of this evening, but I feel my interest is none the less great in the subject under discussion and therefore beg to be allowed to add a contribution after careful reading of the papers. In passing, I would note with pleasure the high standard taken by each contributor to the symposium, a standing altogether worthy of the importance of their subjects. Mr. Renshaw, I think, makes out a very clear case for the British Dental Association and its surroundings, and while it may be urged by some, that the Association, *directly*, can hardly lay claim to all that he asserts for it, yet I think that the Association was the natural and almost inevitable outcome of the work of the pioneers in Dental Reform, and his argument that the minority of the registered dentists who constitute the British Dental Association have done infinitely more than those outside, is so powerful as to be quite unanswerable. Whether all has been done that might have been done for our profession, leads us naturally to Mr. Gaddes' paper. He asks the question first, ought not the Association to make some special efforts to bring within its fold the outside two-thirds on the register who are eligible? I think, yes, and personally believe that more frequent local meetings on Saturday afternoons, within easy reach, ought to be organised, and have confidence this would help much towards such a result. And now, combining two or three points which are referred to alike by Mr. Constant and Mr. Gaddes, I would express my accord with the suggested amendment of the Dentists Act. (a) As directed against unregistered practitioners. (b) That the L.D.S. should be necessary for the title of dentist. The danger pointed out by Mr. Constant is a very serious one and is most unfair towards the dentist. I favour the following up of the action of the Medical Council in reference to infamous conduct in a professional respect. The question of Mechanical Training, and connected with it, examinations in the same—prior to commencement of hospital practice—I think is vital to the well-being of our profession, and if strictly enforced would meet the case of the suggested influx of “medico-dentists” into our ranks. We do not, of course, object to the medical man, but we do and shall continue to object to one who is deficient in *the* most important part of our work, viz., mechanical training. I do not agree with Mr. Constant that the standard of the preliminary examination should be raised merely in a protective spirit. Our standard is high enough while it remains the same as for the medical profession, and a higher knowledge of classics or mathematics, or both, are not likely to raise the ethical spirit of the student. As a profession we are yet young, and so much has been done since the passing of the

Dental Act that one is inclined to expect much, but I think that if we remain loyal to our Association, which has in the past done so much to elevate the standard of the profession, there will be a bright future for us, if we individually do our share towards making it better than when we found it. The liability is that when we cannot get others to go so fast as we desire, we with utter selfishness take umbrage and refuse to help; thus the speed is lessened and the higher desires of our better selves are entirely frustrated. We shall do better to criticise and help within the borders, rather than to lie down, find fault, and refuse to help outside. With 2,000 members our strength would be immeasurably increased. As a practical outcome to our discussion, can we do anything to largely augment the number of members of the Midland Branch during the next six months?

Mr. MILLER offered a few suggestions for securing more members for the British Dental Association. The Association, he thought, should not relax their efforts until they had on the statute books some such measure as they had in America, where it was an actionable offence for any man to operate upon a patient unless he had passed the required examination and obtained his degree. He thought the justice of this would appeal to Parliament, if it were brought before their notice, and if the Association would correspond with those of other countries as to their Dental Acts it would facilitate the English people in getting certainly a more desirable kind of service than they had at present. With the statement that the great residuum were unable to get proper service without going to the advertising dentist, he begged to disagree. At the present moment they were turning out of the hospitals and dental schools a certain number of young men every year. Anyone could see that these young men were able to give, or capable of giving, that attention to the public which it stood in need of, and these young men would be quite willing to give their services at the same price as the advertising dentists did, with greater profit to the general public, and very much more help to themselves on account of the experience they would gain after they had left the college. They would still be learning as they all were learning, no matter how many years they had been in practice. When they had got their diploma they had not finished their education, and he did think, with all due deference to Mr. Campion, that if it were possible to get a statute put in the laws to prevent anyone practising at the chair without a diploma, the general public would not be losers, but very far in the other direction—they would be gainers by it. As to raising the preliminary examinations, he thought that would be a kindness to the candidates themselves. It might seem hard, perhaps to a young man to have to pass a severe examination, but he maintained that it was the greatest kindness that could be forced on any man. He issued from the test, feeling that he was able for anything, and his work became a downright pleasure to him instead of being the

opposite. In conclusion, Mr. Miller said he was very pleased indeed that the Association had come to Preston, and in the name of his fellow-townsmen in the profession he gave them hearty welcome, hoping that their deliberations would bring forth good fruit.

Mr. EDWARDS (Liverpool) said the question would appear to be not so much what the Association had done, but had it accomplished all they might have expected reasonably of it? Mr. Renshaw had given them a long list of the benefits which the Association had conferred upon the profession, some of which, no doubt, could be traced directly to its effects, while others, as Mr. Campion had pointed out, would undoubtedly have originated apart from the Association altogether. The British Dental Association had, to his mind, fulfilled its object admirably in promoting the dental and its allied sciences. The Association was really, he thought, a huge provincial Odontological Society, and as an agent for the diffusion of knowledge and social intercourse it had served the profession well; but whether it has been as active in maintaining the spirit and provisions of the Dental Act is a matter concerning which some doubt may be entertained. How could they account for the fact that only one-third of the members of the profession were in any way connected with the Association. It seemed to him that one cause was the too centralisation of its government, and the meagre information furnished of the work done by the Representative Board. The mass of the profession were not in touch with the governing body. Every man who was connected with the Association was naturally interested in it, and would like to know what was going on at headquarters. He believed that a more complete report of the work and some of the discussions of the Representative Board ought to be reported. Then as to their representation. He was sorry to hear Mr. Campion say that, whatever was said that evening would have no effect on the Board. Was that right? Were they to be subject to the Board, or was the Board, within the bounds of reason, subject to the Association? If they had, as Mr. King pointed out at Manchester last year, true representatives or delegates responsible to them for the policy pursued, they could demand, once a year at least, a *résumé* of the work accomplished. They would thus have a voice on the Board, but now whatever they said or did would have little or no effect. The question of education naturally interested him, as he had been intimately associated with one of the provincial schools for some years. He firmly believed that the passing of an examination in mechanical dentistry would be of great advantage all round. Two years was not a day too long to master, even by the closest application, the details of operative surgery, and to acquire a knowledge of the allied sciences necessary for the examination and subsequent practice of our profession. The test, in order to be effective, should extend over two or three days, instead of as many hours, as at present carried out.

Complaints are made that apprentices did not receive the attention they were entitled to from their masters. If an examination were established which had to be passed before the hospital was entered, and a fairly high standard maintained, it would induce the teacher to feel that he had a position to maintain, that the percentage of passes by his pupils would tell for or against his future prospects of gaining pupils. That led to the question of preliminary examination. He could not see why Mr. Constant should adduce this as an argument in favour of contributing higher dental aid to the public. It seemed, in the first place, rather ridiculous that they should claim a higher than that required by the medical profession. He thought himself that a good stiff examination in mechanical dentistry would, to a certain extent, at least produce the effect that Mr. Constant wished to get by raising the standard of the preliminary examination.

Mr. CARTER (Leeds) did not think they ought to go too far in the extension of examinations. It seemed to him that this was an age when they examined to death, and it really was not wise to go beyond what was required in practice. He thought if the examinations were made stiffer, it would have the effect of reducing the number of students who attended at the Colleges, and he thought also that it was stiff enough. It would have the effect of shutting out from the profession many young men who would make very good and useful members. He knew for a fact, that a considerable number failed to come up to the present standard. An acquaintance of his had twice failed, although he could do very good work. He did sympathise with the idea of making a mechanical training necessary.

Mr. HARRISON (Sheffield) also thought it would be a mistake to increase the difficulty of the examination. He had noticed at school that it was often boys with little knowledge who most easily satisfied the examiners, took all the prizes and were puffed up as great fellows. Those who failed in the literary examinations were often the best mechanics. It was the boys who frittered away their time at school in cutting the desks and interfering with mechanical things who often turned out the best as practical men. He should, however, like to refer to another matter, as the speakers so far had been agreed that the main point of the profession resolved itself into the mechanical aspect. He did not wish to say that there was no scientific side to it, for that would be ridiculous, but virtually it was a mechanical profession, and it seemed to him that the Association could not do better than consider the possibilities of advancing in a mechanical sense. Many who took apprentices and pupils handed them over to the mechanical assistant, practically to teach them their profession. It seemed to him that they were creating a very great difficulty in the profession by not localising the mechanical assistant. They took him into their workshops, cultivated him in their various methods, and gave him no *locus standi*, although he did the yeoman work of the establishment. He knew

several instances in the city from which he came, of men who were not registered, finding that they could supply the public with what they wanted, only by evading the Dental Act. These men were being demoralised and it was this position which the Association would have to consider.

Mr. CAPON (Liverpool) said he was one of those who was perfectly satisfied with the work done by the British Dental Association up to the present. He thought the result of their work was very satisfactory considering the amount of support received from the profession. He thought that it was a disgrace that so few members of the profession were members of the Association. Some time ago he wrote to the Secretary of the Association making a suggestion to him that it would be advisable to appoint a man in each town or city, especially where there was a dental hospital, to look up the dentists of the district and get them to become members of the British Dental Association. He himself had called upon several men who had just qualified, and with no trouble at all he got seven men to join. He found that some of them seemed to regard it almost as an honour to be so called upon, and all were greatly pleased. This was, he thought, a matter which the Association might well consider. In the Chemists' Association he believed such work was done by the local secretaries.

Mr. D. HEADRIDGE (Manchester) said that with the younger men of the profession, the Association was not doing all that it might do. He did not think that prosecuting was the proper way to gain a higher result, but he did think that another course might be adopted, either by an amendment of the Act, or by an agreement amongst the dentists who were members of the Association and those who were not members, to restrain from advertising. A universal agreement might be entered into, such as prevailed amongst members of the Stock Exchange, and a notice, put into the papers that no members were allowed to advertise. Such a step would probably be of advantage to the dentists as a body, for it was very hard on the younger ones to feel when they entered the race that they were handicapped as they were by the qualities, which he hoped, ennobled the profession, such as self-respect and self-restraint; that they were opposed by those, who simply by vaunting their superiority were able to catch the uneducated eye of the public. He thought that perhaps as the public became more educated, the vocation of advertising dentist would become less. Still, at present it was very hard for the beginners.

Mr. COWELL said in Preston there were a great many advertising men, and a short time ago the registered and non-advertising dentists formed a small association, with the object of trying to stop this. They made representations to the doctors that they ought never to administer an anæsthetic or hold a consultation with an unregistered or advertising dentist, and as a result a resolution, agreeing to this sug-

gestion was adopted. That was very satisfactory so far as it went, and he thought if the dentists in every town were to form such organisations, it would have a certain effect upon the matter. He knew that in Preston, men had brought medicos from other towns to do the work for them. If they were always put to that trouble, the public would soon find out that there was a difference between the man who advertised and the man who did not. The Association might, he thought, do something in the way of getting articles inserted in the papers. There were dozens of dentists' advertisements in the local papers. One man even stated in small type at the bottom of the space, that he wished it to be distinctly known that he was not on the register. There ought, he thought to be a clause in the Act to prevent such a thing. By refusing to call themselves dentists these men could do what they liked, but they still advertised, Teeth ! Teeth ! Teeth ! He saw on the previous day that a man had been fined £20 for practising as a doctor when he was not qualified, and there ought to be something like that in their own profession. There was a man in Preston who actually went round the country in a cart and prescribed for the people. It was a scandal that such a state of things should be possible. His idea was that such an offence should be rendered penal.

The meeting was also addressed by Mr. Houghton of Manchester, and Mr. Pidgeon of Bootle.

Mr. PETER HEADRIDGE (Manchester) also spoke briefly in favour of better education, suggesting the value of a knowledge of chemistry and electricity.

The CHAIRMAN then called upon the authors of the papers to reply.

Mr. RENSRAW said he felt there was very little for him to reply to, in regard to the paper he read, as the paper to a large extent was simply historical matter and there was nothing of a very discursive nature in it. Reference had, however, been made to his statement that certain books had been published since the institution of the British Dental Association, and it was stated that these books would have been published if the Association had not existed, but he maintained that the publication of some of these books had been hastened by the educational advancement of the members, and of a growing need and long-felt want of dental text books which were up to date, and that some would not have been written but for the educational advancement, which was the outcome of the operations of the Association. He was, however, much obliged to them for the attention with which they had received his paper, and as Mr. Constant was absent from the meeting, he would leave Mr. Gaddes to reply for both.

Mr. GADDES said he was much obliged to Mr. Campion for the kind words he had spoken with regard to one point—the educational aspect of the question—but he was sorry that he only referred to one phase of it. He should have been glad to have heard him express his opinion as to the division of the examination in professional subjects. He was

glad to hear that he was quite in accord with Mr. Constant and himself as to the desirability of having an examination in mechanical dentistry, and to hear so many of the speakers also in favour of it ; indeed, there had not been one dissentient from the view that there should be a primary examination in this branch, as expressed in the resolution of the Association passed at a meeting two years ago, but which had been cast aside. Still more frequent meetings of the Branch must help the public to know who were respectable dentists and who were the advertising and disreputable men. This must also increase the desire of a number of respectable men who were not members of the British Dental Association to join their society. He was sure they would all be glad to see these men—sheep in sheep's clothing—amongst them. He was glad to hear Mr. Edwards, a responsible teacher, also in favour of the resolution which the Association had passed regarding a primary examination in mechanical dentistry.

With regard to Mr. Harrison's desire for some regulation for mechanical assistants, there was a good deal to be said in favour of it. Mr. Cunningham had expressed the opinion that better provision should be made for the training of those men, and their status was a subject which possibly would have to receive the attention of the Association at some future date. He was gratified to hear Mr. Pidgeon's remarks, especially his conclusion that when qualified men were prepared to do good and proper work for the public at small fees, they would then meet the advertising men on their own ground. There were doctors who were glad to make visits at a shilling or eighteenpence, not to mention club fees. It was the same in law, where some men, verging on the line of etiquette, almost went over the ethical margin—almost catered for practice. Now and then this came before the authorities, and necessarily met with censure. He had all along maintained that there was nothing dishonourable in a man working for moderate fees in moderate circumstances, for the fee ought to be regulated to the patient's means. All patients could not pay guinea fees, or fees on that scale ; but there were those who could pay five shillings for adequate service, and if these patients were *bond fide* so far as their means were concerned, then there was nothing dishonourable in it. The late Mr. F. Weiss, who would be well remembered as one of the pioneers of the profession, said there was nothing disreputable in a man receiving fees which could be paid by the poorer section of the community. The advertising man as a rule did bad work and probably got bigger fees in the end.

As the idea of a primary examination in mechanical dentistry had met with such general approval, he would suggest that the Branch pass a resolution requesting the Representative Board to take the necessary action to make such compulsory, in fact, to carry out the resolution the Board had adjourned *sine die*.

Mr. D. HEADRIDGE said he thought such an examination would be an advantage, and seconded the motion.

The proposition was, however, on the suggestion of Mr. Campion adjourned until a future meeting, in order that the Representative Board could not retort that it had not been passed by the whole of the Association.

The CHAIRMAN said personally he did not think there would be any harm in the resolution being passed at that meeting, but gave way to Mr. Campion's proposal. Of course, no harm would be done if it lay in abeyance for a time. Although the papers had not, owing to the lack of time, been thrashed out as was desirable, what had been done was of considerable value ; there was one point he should like to emphasize, which was that they should not lose sight of the question of the election, instead of the nomination, of Representatives on the Board. The question had been up before and discussed by the Board, and was put down in a very peremptory manner by one of the members ; this ought certainly to be borne in mind. As to the question of the mechanical and the surgical practitioner, he thought it was a matter which would inevitably settle itself, there must be a supply to meet the demand ; there was a demand for mechanical work, and there would be a supply. The question of mechanical assistants was one which had been to the front for a number of years. The want which was felt for these men had led to the establishment of the school of Dental Technological Knowledge, which had not yet had time to show what it could do, and should not be unduly criticised, as it had not yet turned out any pupils, but he believed so far as it went, it was upon the right lines and would, he thought, turn out a number of capable workmen. The Japanese had settled this question centuries ago, and to-day they would find men who could construct teeth from a model of wax, they did not use plaster of Paris ; they would carve a plate of wood to fit the mouth, with whale-tooth bone for the incisors and copper tacks for the molars—that had been going on for hundreds of years, and he had seen sets which had been in use fifteen years.

At the close of the discussion, Mr. Renshaw demonstrated Dr. Patrick's system of making seamless gold crowns ; and Mr. C. D. Grundy (Batley), showed a Hydraulic Press for swaging up metal trial plates, &c., and demonstrated the method of vulcanizing upon polished metallic surfaces.

A vote of thanks to the Mayor and Corporation of Preston for the use of the Council chamber for the meeting, brought a very successful meeting to a close.

The contributions to the Benevolent Fund realised £2 11s.

Scottish Branch.

A COUNCIL meeting of the above Branch was held at the Faculty of Physicians and Surgeons, St. Vincent Street, Glasgow, on Thursday, November 28. Under Bye-law 2, Messrs. Andrew M. McCash, L.D.S.Glas., and James D. Forrest, L.D.S.Glas., were elected members of the British Dental Association. A report was given of the progress of the cases of infringement of the Dentists Act, which had been considered at the previous meeting. After discussing these the Council adjourned.

A meeting of the Branch was held at 8 p.m., when Lilian B. Murray, L.D.S.Edin., David Munroe, L.D.S.Edin., T. Dick Page, L.D.S.Edin., T. A. Macintosh, L.D.S.Edin., E. R. Wallis, L.D.S.I., D. Paton Boyd, L.D.S.Glas., Andrew M. McCash, L.D.S.Glas., James D. Forrest, L.D.S.Glas., were duly proposed and seconded for membership of the Branch.

On the President calling for casual communications, two specimens of abnormal wisdom teeth were shown on behalf of Mr. Keith Common Stirling, and a specimen of work made by Mr. Grundy's Swager was exhibited by Mr. John Dunlop (Kilmarnock).

A discussion on the British Dental Association in its relation to the Dentists Act, 1878, was opened by Mr. Rees Price. Messrs. J. A. Biggs, J. S. Amooore, and W. Bowman MacLeod spoke on the matter, and after some discussion as to the next meeting, the Branch adjourned.

Benevolent Fund.

THE REPORT OF THE TREASURER OF THE BENEVOLENT FUND OF THE BRITISH DENTAL ASSOCIATION.

THE Treasurer extremely regrets that he did not send his report to the Hon. Secretary in time for the Annual Meeting. He was so unwell when he left town for his holiday that he omitted to write it before going, and his attempt to send it from Switzerland failed.

He now gives the balance-sheet for 1894, which he quite thought had been sent to the Hon. Secretary for presentation at the meeting, as it was completed at the audit in May last. From this it will be seen that the finances of the Fund are in a satisfactory condition, the receipts being £37 more than in the preceding year, and the expenditure for benevolent allowances £52 greater. The former result was due partly to more general interest in the Fund, but more especially to letters written by the Hon. Secretary to gentlemen with whom he was acquainted, placing before them the benefits resulting to the afflicted members of the profession from the help afforded them by the Fund.

Dr. REVENUE ACCOUNT FOR THE YEAR ENDED DECEMBER 31, 1894. Cr.

	£	s.	d.	£	s.	d.
To Donations	79	19	2	
„ Subscriptions for 1892	3	3	0	
„ „ 1893	14	14	0	
„ „ 1894	312	3	0	
„ „ 1895	2	12	6	
„ Interest on Investments	332	12	6	
			34	5	6	
			£446	17	2	
By Benevolent Allowances:—						
Payments for 1894	368	5	4	
„ 1895	0	12	0	
„ Stationery and Printing				368 17 4
„ Postages and Sundries				17 5 9
						9 0 0
„ Surplus Balance—carried down	395	3	1	
			51	14	1	
			£446	17	2	

BALANCE SHEET, JANUARY 1, 1895.

	£	s.	d.	£	s.	d.
To Capital Account:—						
Balance from last Account	1,417	17	4	
Balance above brought down	51	14	1	
			£1,469	11	5	
By Investment in Consols				£ s. d.
Balance at Western Branch of Bank of England				1,306 13 3
Cash in hands of Secretary				132 18 2
						30 0 0
						£1,469 11 5

May 21, 1895.—We have written up these Accounts from the Books and Vouchers of the British Dental Association Benevolent Fund, and certify them to be correct, and have seen the Vouchers for the amount invested.

(Signed) J. W. BUTCHER & Co., Chartered Accountants, 18, Bishop's Road, W.
C. J. ASH.
STORER BENNETT.
L. MATHESON.

The larger amount of grants due to the improved financial condition means greater comfort given to the necessitous applicants for relief, in some cases preventing their being obliged to go to the work-house.

The details of cases helped were given at some length by the Hon. Secretary at the Annual Meeting, and the Treasurer is sure that the subscribers must have been much gratified to hear how great was the good done, and in many cases to the young what lifelong benefit was given by educating them and putting them forward in the world in positions they could not otherwise have had.

The Committee are much helped by being now able to use all monies placed in their hands for immediate relief, without being obliged to invest all sums over £5. They are, however, anxious to increase the amount of their funded property, but think that the urgent needs of applicants should have the prior claim, and when these have been met, they will be only too glad to invest any balance.

(Signed), A. J. WOODHOUSE,

November 27, 1895.

Treasurer.

The following contributions have been received since May last :—

New Subscriptions.

Mahonie, Mrs., Blenheim House, Hanover Street, Sheffield	£1	1	0
Mountford, J., 24, Bennett's Hill, Birmingham	...	1	1 0
Moxon, Henry J., 137, Sloane Street, S.W.	...	0	5 0
Hilder, A. T., 83, Edmund Street, Birmingham	...	1	1 0
Tucker, James S., 38, Heytesbury Street, Dublin	...	0	10 6
Bishop, Shenstone J., 59, Lower Mount Street, Merrion Square, Dublin	...	1	1 0
O'Meehan, Patrick, 4, Upper Mallow Street, Limerick	...	0	10 6
Oxley, L. J. Rice, Dogpole House, Shrewsbury	...	0	2 6
Tucker, James S., 38, Heytesbury Street, Dublin (additional)...	...	0	10 6
Colyer, J. F., 11, Queen Anne Street (additional)	...	1	1 0
Richardson, F. V., 1, Silwood Road, Brighton	...	0	10 6
Skipp, G. N., 12, School Road, Sale, Manchester	...	1	1 0

New Donations.

Sanders, J. J. H., The Square, Barnstaple	...	5	5 0
Andrews, G. S., Chapel Street, Ripley, Derbyshire	...	0	2 6
Hughes, Morgan, Eastbridge, Addiscombe Road, Croydon	...	1	1 0
Klught, H. J., 156, Westbourne Grove, W.	...	3	3 0
Thomson, George, 4, Park Place, Torquay	...	0	10 6
Ackery, John, 11, Queen Anne Street, W.	...	1	1 0
Briault, E. H., 145, Finchley Road (special donation)	...	2	2 0
"Ex Post-graduate of Dental Hospital"	...	0	7 6

Midland Branch of British Dental Association, collected at meeting, June 22, 1895 (per G. G. Campion) ...	£6	3	0
Eastern Counties Branch of British Dental Association (per W. A. Rhodes) ...	1	4	6
Southern Counties Branch of British Dental Association, collected at Salisbury, June 22, 1895 (per F. V. Richardson) ...	5	2	6
* Collected at Annual Meeting at Edinburgh :—			
At the Annual Dinner ...	9	11	0
At Smoking Concert (per G. G. Cunningham) ...	2	14	4
In Box in Meeting Rooms ...	1	6	0
Read, Thomas, 31, Cavendish Square... ..	1	1	0
Collett, E. P., Highfield, Wilbraham Road, Chorlton-cum-Hardy, Manchester... ..	0	10	6
Midland Branch of British Dental Association, collected at meeting, October 26, 1895 (per G. G. Campion) ...	2	11	6
Vice, W. Armston, 5, Belvoir Street, Leicester ...	1	1	0
S mith, A. Hopewell, Lindum House, Boston ...	0	10	6

JOHN ACKERY, *Hon. Secretary.*

11, *Queen Anne Street, W.*

ORIGINAL COMMUNICATIONS.

A Lecture-Demonstration on Electric Energy and its Applications to Dental Surgery.†

By WILLIAM A. BRYSON, M.I.E.E., F.R.S.GLASGOW,

AND

HERBERT B. EZARD, L.D.S.EDIN.

MR. PRESIDENT AND GENTLEMEN,—The object of this lecture-demonstration is to show, in as simple a manner as possible, the many conveniences to be derived from the adoption of electric energy in the operating room and workshop. Without entering too deeply into electro-technics, it will be the aim of the authors to place before the members of the British Dental Association the various methods of securing for their delicate manipulations the valuable aid of electricity, with practical notes on its generation and measurement,

* In addition to the above cash amounts received at the Annual Meeting in Edinburgh there were :—

New Subscriptions <i>promised</i>	£14	11	6
New Donations <i>promised</i>	14	19	6

† Read at the Annual General Meeting of the Association held in Edinburgh, August, 1895.

combined with a practical demonstration of its applicability to the instruments in daily use in the profession, viz., motor, mallet, light, cautery, hot air syringe, water heater; and with electricity at his command the dental surgeon has, if not a perfect, a very nearly so, obtundent of sensitive dentine, in two ways, viz., by running fine sharp burs at the highest attainable speed, and by the cautery loop at a white heat passed gently over the sensitive surface.

The dental surgeon can avail himself of electric energy from the following sources:—(1) primary batteries; (2) storage batteries; (3) gas or oil motor and dynamo; (4) corporation supply mains (known as the continuous street current).

Let us consider in the first place the primary battery as the source of electrical energy. The best known batteries are:—

BATTERY.	COMBINATION OF METALS.		VOLTS.
Daniells	Zinc and copper	... 0.9
Grove	Zinc and platinum	... 1.7
Bunsen	Zinc and carbon	... 1.7
Poggendorff	" "	... 1.9, 2.3

The excitants for each are:—

Daniell ...	Dilute sulphuric and cupric sulphate.		
Grove ...	"	"	" nitric acid.
Bunsen ...	"	"	" "
Poggendorff ...	"	"	" bichromate of potash.

In the above cells there are to be found the following characteristics common to all. The electric energy is derived from the combination of the metallic zinc with the dilute H_2SO_4 and the supply of oxygen necessary for the reaction is obtained by the decomposition of the aqueous electrolyte. The reduction of zinc by sulphuric acid can be expressed in British thermal units:—

Oxidation of zinc = 2340 British T. U.

Solution of oxide in H_2SO_4 and water = 666 " "

or a total of 3006 British thermal units developed by the reaction. To prevent polarisation we must get rid of the hydrogen, and this can be accomplished by the addition of either cupric sulphate, nitric acid, or chromic acid, which, when decomposed in the cell, will yield their oxygen to combine with the hydrogen. Such decomposition will involve an expenditure of energy and reduce the maximum available thermal units to the following:—

Daniell battery	1419	British T. U.
Grove or Bunsen	2772·4	„ „
Poggendorff	2827·5	„ „

The Poggendorff battery therefore shows 2827·5 British thermal units for the consumption of 1 lb. of zinc.

By Joule's law, each thermal unit represents 772 foot pounds, or a total for the Poggendorff battery of 2·182820 foot pounds.

If we consumed 1 lb. of zinc in a battery in the space of one minute, the horse-power developed, say, by the Poggendorff bichromate cell, would be nearly 68 horse-power. It is needless to say that such a rate of consumption would necessitate a *somewhat large battery*. By lengthening the time period to one hour the energy developed would be 1·7 H. P.

It is evident therefore that the Poggendorff battery is most suited for dental purposes. It has the highest electro-motive force, viz., 1·796—2·3 volts, and develops the highest energy in an equal consumption of zinc, and, unlike the Grove and Bunsen, is entirely free from noxious fumes.

The usual formula given for preparing the exciting fluid is:—

Potass. bichromate	18 oz.
Sulphuric acid	54 oz. (by weight).
Water	$\frac{3}{4}$ gallon.

Boil to dissolve the crystals, allow to cool, pour into battery jar and carefully add H_2SO_4 .

From past experience it has been found that this solution is too active, and rapidly destroys the zinc plates. Mr. Ezard found, however, by practical experiment, that by greatly reducing the whole charge, the battery was more constant.

In a paper read before the Edinburgh Dental Students' Society in February of this year (*British Journal of Dental Science*, August 1) he gives as his formula for a similar charge:—

Bichromate	8 oz.
H_2SO_4	6 oz. (by measure).
Water	$\frac{3}{4}$ gallon.

It must not be forgotten that the plate surface per cell is part of the formula as follows:—

“There are three plates or electrodes, two plates being

carbon, each 5 inches long, $1\frac{1}{2}$ wide, and $\frac{1}{4}$ inch thick, and one zinc 5 inches long, 3 inches wide, $\frac{3}{8}$ inch thick. Cut, not compressed, carbons must be used. The zinc must be rolled, not cast, and amalgamated by being rubbed over with a little 1 in 10 vitriol and water and mercury until bright."

A battery of 10 cells in series will give 15 to 20 volts. Instead, however, of working a battery of 10 cells in series, it is more economical to make up a battery of 30 cells—3 in parallel and 10 in series—and by altering the connections at switch board it is a simple matter for the operator to use motor and lamp, mallet or lamp simultaneously or separately. Another improvement is the regulation; this is carried out by gradually lowering the zincs by means of ratchets into the exciting fluid as the current weakens, or rather reducing the internal resistance by exposing a larger surface of the metal to the oxidising influence of the acid, and is especially useful when the battery is used for the mallet or lamp.

To charge a battery as suggested, viz., 30 cells, will cost: bichromate potass, 15lbs., price 8s. 6d.; sulphuric acid, 180 ozs. (by measure), price 3s. 9d. = 12s. 3d., that is, estimating bichromate at £3 2s. 6d. per cwt., and vitriol at 3s. 4d. per gallon.

The amount of electric energy that such a battery will give is as follows: Hours per day of work, 4; hours per week 20; at this rate the life of battery is 4 weeks—total of 320 to 350 hours;

$$\therefore \frac{\text{Cost of charge}}{\text{Hours of work}} = \frac{147}{200} \text{ pence per hour,}$$

or about one halfpenny per hour.

The initial cost of a home-made battery of 10 cells, similar to one exhibited, is about £2 10s. The carbons are permanent, and with ordinary wear and tear each zinc lasts 9 months.

(2) *Storage Batteries.*—"A secondary or storage cell is the name given to that class of apparatus which, although quite inert in itself, yet on the passage of an electric current through it, certain chemical changes are induced which render it capable of receiving, retaining and re-developing a certain amount of electrical energy."*

* "Practical Electrical Engineering." Biggs & Co.

This is the converse of the voltaic cell already referred to, for in a primary battery the electrical energy is developed by the direct decompositions of the exciting fluid or electrolyte, and one or both of the metallic elements, the magnitude and rate of such electrical development being chiefly dependent upon the chemical activity of the materials employed.

It may be of interest to some to hear a *résumé* of the origin and development of the storage cell from an interesting article on secondary batteries* in "Practical Electrical Engineering." It appears that the idea of electrical storage may be traced back to 1801.

Again Faraday, when electrolysing a solution of acetate of lead, found that peroxide of lead was produced at the positive, and metallic lead at the negative, pole of his electrolytic bath; and in his "Experimental Researches" he comments upon the high conductivity of the lead peroxide and its power of readily giving up its oxygen.

To Gaston Planté falls the honour of having first thoroughly appreciated the importance of the phenomenon of electrical storage, but another Frenchman apparently forestalled him in seeing the great economy to be gained in point of time, by applying salts of lead to the unformed lead plates.

"Planté's original cue consisted of two sheets of lead, one laid upon the other, separated with coarse cloth, and then rolled into a spiral. If this element were placed in a jar with dilute sulphuric acid, and a current passed through it, the surface of the lead plate connected to the positive pole of battery was found coated with a fine film of lead peroxide. At each successive charging the peroxide on positive plate sank deeper into the metal, while the negative was scarcely altered in appearance. This process was continued to change the negative into spongy lead. It was this delay in forming the plates that prevented the Planté storage cell being a commercial success."*

"Camille Faure, seeing the great loss of time incidental to Planté's electrolytic method of producing the desired depth of active material, conceived the idea of accelerating their

* *Ibid.*, Biggs & Co.

formation by applying a layer of chemically prepared oxide of lead to their surfaces, and then converting it into active material by the action of an electric current."

The paste he made use of was composed of minium or litharge, and weak sulphuric acid.

Owing to defects which speedily developed themselves in Faure's early pasted plates, other methods of preventing short circuiting had to be devised. Many plans have been suggested and much ingenuity has been exercised in devising methods of holding active materials in metallic elements. Various patents were taken out by experimenters, among whom the names of Sellon, King, Volkmar and Swan are familiar to all. These specifications, combined with Faure's original discovery, constitute that group of inventions known as the E. P. S. patents.

Four cells of the E. P. S., L. type, having seven plates in each, will, when fully charged, supply sufficient current to work the motor and mallet for a period of forty-eight to fifty hours. It must be noted that not more than 75 per cent. of the charge put in should at any time be taken out of the battery, as there is risk of injury to the plates if over-discharged. The particulars of the battery is as follows:—Number of plates, 7; weight of acid, 20lbs.; part of carbon, .18; charge in amperes, 10-13; discharge in amperes, 1-13; capacity ampere hours, 130; length, 5½; width, 12½; height over all, 19½; weight of cell with acid, 72lbs.; price, £1 10s. each, or £6 for the battery. The electromotive force of each cell when discharging is about 2 volts.

For dental purposes the wood-and lead-lined boxes should be used for convenience in handling when being removed for recharging. As a guide as to when the cells are approaching their minimum point of charge, the hydrometer reading is of the greatest value, as the specific gravity of the acid will be found to have dropped in direct proportion to the quantity of current taken out. The gravity of the acid, as put into the cell before the first charge, should be 1190, and the current should be forced through the battery until the acid turns milky, or, as the term has it, "boils," when the specific gravity will be found to have risen to 1210. If, after several hours' use, the gravity has fallen to, say, 1170, and there is a rise of 6° in an

hour of charging, we will have to continue the charge for six and a-half hours $\frac{1210-1170}{60}$.*

The cost of charging the accumulators varies from 2s. 6d. to 3s. each.

The battery of storage cells can be charged at night by coupling them to a primary battery. This entails two batteries, and is not recommended, as it would be more economical to employ the primary direct.

(3) Electric energy can also be developed by the adoption of the small combined gas engine and dynamo, such as the "Gardner," exhibited by the Dental Manufacturing Co., and for which the makers claim a high efficiency.

Here we have mechanical power converted into electrical energy by the mere revolutions of a closed copper circuit revolving between the poles of an electro-magnet; but the mechanical power is gained by chemical agency, viz., the combustion of carburretted hydrogen and atmospheric air. The dynamo is capable of running a 10-volt motor, and with a resistance a 4-volt mouth lamp and the electric mallet, without the intervention of storage batteries; and the consumption of gas at full load, as tested by us, is from 18 to 20 cubic feet per hour. Allowing 20 cubic feet for six hours we have 120 cubic feet per day, or a cost of 6d. for electrical energy, whereby the professional man is enabled to undertake his delicate operations with little or none of the fatigue experienced with the foot gear and hand mallet of old.

This plant seems to be the ideal of what the dental surgeon requires, as it is practically self-working and self-governing. The nominal power of the dynamo is 10 volts at 10 amperes, but it actually develops 11.5 to 12 volts. At the same time there is ample power in the engine for running lathes, &c.

The primary cost is insignificant, and no electrical knowledge is required in the working.

This "Gardner plant," together with a primary battery plant and complete surgery installation, can be seen in Mr. Ezard's residence on application to him.

(4) *Electric Energy from Corporation Mains.*—Residents in large cities, where the electric light has superseded the

* Jamieson.

older illuminant, can obtain the required energy in many cases within fifteen feet of their *brass name plates*, and the Corporations will supply the current and charge on meter readings the same as they do for gas, *only perhaps more so*.

The average price per kilowatt, or Board of Trade unit for electrical supply is 6d.; in some towns—for instance, Newcastle, it is as low as 4½d. To some this may not convey much information, but a practical example is here. Taking the dental motor—this machine when running from the Corporation electric supply mains, will absorb '3 amperes at 100 volts, or 30 watts per hour under light load, and say 1 ampere under work, or 100 watts per hour—ten hours' work for 6d. This may seem startling, but through the kindness of Lord Kelvin in lending us his standard balance (whereby the actual energy absorbed can be estimated), we have been able to verify the statement.

In order to estimate the current a knowledge is required of practical electrical units, viz. :—

Ampere = the unit of current. Volt = the unit of electro-motor force. Ohm = the unit of resistance.

One ampere will decompose '00009324 grammes of H₂O per second; one ampere will deposit 1'118 grammes of silver in one second.

One volt is the electro-motive force which will maintain a current of 1 ampere in a circuit whose resistance is 1 ohm.

One ohm (legal) is taken to be the resistance of a column of mercury, one square millimeter in section, and 106 centimeters long, at 0° C.

$$\text{Ohm's law: } C = \frac{E}{R}.$$

Let E = the electro-motive force of a battery in volts.

„ R = the total resistance in ohms.

„ C = the current in amperes.

$$\text{Then } C = \frac{E}{R} \text{ amperes.}$$

$$\therefore E = C \times R \text{ volts.}$$

$$\therefore R = \frac{E}{C} \text{ ohms.}$$

POWER, $P \frac{w}{t}$ = Watt, which is the rate of doing work when an ampere passes through an ohm, and is equal to one joule per second = $\frac{1}{748}$ H.P.

The Board of Trade unit is 1000 volt ampere hours, or 1000 Watts per hour.

We had hoped to have shown you everything in complete working order, but pressure of time, and the fact that we were not allowed to make promiscuous holes in the venerable University Building, have rather handicapped the originally intended scope of this paper.

At this point it is desirable to notice a most interesting article by Dr. William J. Morton (New York), which appeared in a recent number of the *Electrical Review*, and as it is a step towards the more extended use of electric energy in dental surgery, we think a short extract may be of interest to the members of the British Dental Association. The subject of the paper is "Cataphoresis and Solutions of H_2O_2 , for Bleaching Teeth," &c.

He says:—"By cataphoresis is meant the movement of fluids, together with the substances they may hold in solution, from the positive pole of electrodes conveying a continuous current in tissue, towards the negative pole. As signified by the derivation of the word 'cataphoresis,' the substance held in solution 'goes down' with the current; that is to say, moves with its ordinarily accepted direction of flow."

So much for his description of the derivation of title. His many experiments were carried out with a view to ascertain whether discoloured teeth could actually be bleached by cataphoric medication. The electrical outfit consisted of a large voltaic battery of thirty Poggendorff cells, an E M F of sixty volts being required; a rheostat or adjustable resistance; an ampere meter to read to milliamperes, and a needle-holder for platinum wire.

Experiment No. 11 is most interesting. Dr. Morton says: "A molar tooth containing a large cavity, having half of its crown still intact. The enamel of the crown was badly discoloured by organic decomposition; the central divisions of the dentinal tubuli were well exposed. Contrast was made by comparing it with another tooth to match the colour, so that the shade could be determined. Cavity packed with absorbent cotton; rubber dam adjusted, and the roots of the tooth imbedded in a piece of beef meat. Cotton was tightly wound about the platinum wire, constituting the positive electrode; the negative had another wire inserted into the beef about one inch away from the imbedded tooth.

"Solution of chloride of sodium, $\frac{3}{4}$ of a cubic centimetre, and $1\frac{3}{4}$ cc. of H_2O_2 , 25 per cent. water, 75 per cent. made by shaking two parts of pyrozone, 25 per cent. solution with one part water and separating the fluid in a funnel, was dropped into the cotton with a pipette; the current was turned on and very quickly dried it (which was indicated promptly by the fall of the needle of the milliamperes meter), and more solution was continuously added. The darkened portion of the tooth bleached perceptibly white within a minute; current strength 25 milliamperes. Then about the same number of milliamperes was employed during 5 minutes; enamel perfectly bleached. The bleaching action was also evident at the ends of the roots of the tooth, the H_2O_2 having been conveyed there by way of the open pulp canals. These latter, therefore, in actual practice, should be closed by a non-conducting cement."

We give you this extract merely to point out and emphasise the great possible scope of the use of electricity in dental surgery.

In concluding, we have to express our great indebtedness to Lord Kelvin for so kindly giving us the use of his instruments, and to the firms who have assisted in making so interesting a display of electric dental appliances.

We have also to acknowledge our indebtedness to the following authorities, viz., Professor Sylvanus Thompson, Dr. H. Morton, Professor Jamieson, and others.

We trust that this practical Lecture Demonstration will help to point out to the dental profession at large, and to the members of the British Dental Association in particular, the necessity of advancing with the times, and that there are practically four forms of electrical energy which may be employed at a cost which is trifling when compared to the enormous benefits derived from acceleration of work and minimising of discomfort both to patient and operator.

(During the reading of the paper by Mr. Ezard, the various appliances were shown working with the different currents by Mr. Bryson, the standard full load test of the motors being the grinding down of tusk-ivory with a $\frac{3}{8}$ inch diameter steel stump-wheel.)

THE JOURNAL OF THE
LEGAL INTELLIGENCE.

Claim for Fees.

Mr. ALFRED MAURICE, dental surgeon, Oswestry, sued Mr. William Kilvington, Oswestry, for £6 8s., due for professional services rendered and goods supplied. Mr. Wallis appeared for plaintiff and Mr. Bott for defendant.

Plaintiff called, said in August, 1894, he was consulted by Mrs. Kilvington about removing her teeth and making her an artificial set. He extracted teeth on five occasions administering gas each time, and took out twenty-six altogether. He made a model of her mouth in January, 1895. Her husband, who accompanied her, asked what the fee would be and he answered £8 8s. On February 13, defendant called and complained that the upper set was too loose and he told her he thought defendant was wrong. She called again on February 20, and made a complaint, and again to satisfy her he took a model of her mouth. On that occasion she offered to pay him £1 for having extracted the teeth, but he told her he could not divide the fee. On April 10 defendant paid £2, but on April 16 she wanted another alteration and he made it. On May 27, she wanted springs put in and left the teeth with him and never came again for them. A few weeks afterwards he wrote and told defendant that they were waiting. The teeth bore evidence of being worn. He thought they fitted all right. He only made the alterations to please defendant.

Cross-examined by Mr. Bott: When you delivered the teeth you say they were all right and perfect and yet you made all these alterations.

Plaintiff: Yes. It was true Mrs. Kilvington had said she could not use them for eating or talking.

Mr. Bott contended that the teeth were not a perfect set and could not be used, and mentioned that on one occasion they fell out of her mouth before she got home. Moreover the agreement was for a perfect set and his client had been put to a deal of discomfort in consequence.

He called Mrs. Maria Jane Kilvington who, in the course of her evidence, stated that the agreement with Mr. Maurice was that if they were not a perfect set they were to be returned, and as this was the case she returned them.

Mr. Kilvington corroborated his wife's evidence.

His Honour in giving judgment said that although plaintiff was no doubt a very capable professional man, yet in this case he did not think he had carried out his contract and therefore judgment would be for defendant.—*Montgomery County Times*.

Action by a Dentist for Fees.**COMER v. GWYNNE.**

Before Mr. Justice Mathew, Queen's Bench Division, Dec. 6.

(Reprinted from the *Daily Telegraph*.)

Mr. FRANK COMER, described as a specialist in advanced American dentistry, practising at 9, Hereford Square, South Kensington, sued Mr. John Gwynne, engineer, carrying on business at Cannon Street and Hammersmith, to recover £105, the cost of supplying Mrs. Gwynne with a patent removable bridge case in duplicate containing four teeth. Defendant denied that there was a contract, and pleaded that the plaintiff's charge was excessive.

Mr. R. M. Bray appeared for the plaintiff; while Mr. Macaskie represented the defendant.

Mr. BRAY stated that the plaintiff's speciality was removable bridge work in duplicate. The advantage of this work was that if anything happened to the bridge work it could be unscrewed and the duplicate fitted. In July, 1894, plaintiff did some work for defendant, and in the following May he received a letter from Mrs. Gwynne asking for an appointment. An appointment was made, and the defendant and his wife called upon the plaintiff. Mrs. Gwynne had a broken bridge case which had been put in by some London dentist, and she desired to have it removed and replaced by something newer. A question arose about fees, and plaintiff told the defendant that he could not tell exactly what the charge would be until he knew precisely what work had to be done. He, however, pointed to his book of fees, and stated that his terms would not, at any rate, be higher than those there mentioned. The book in question stated the prices of the different classes of work in dentistry. Subsequently Mrs. Gwynne called again, and plaintiff on that occasion, after examining her mouth, told her that her case was broken, and she said she would have a new case. Plaintiff then told her that she could have four teeth on a fixed bridge at fifteen guineas per tooth, or four on a removable bridge in duplicate at twenty-five guineas per tooth. Mrs. Gwynne selected the latter, and plaintiff executed her order. After the teeth had been made Mrs. Gwynne refused to take the duplicate or to pay the plaintiff's charges. Plaintiff had previously done some work for the defendant for thirty guineas, which was a reduction of his usual fees, made because he thought that the defendant would be able to introduce other customers.

PLAINTIFF was called, and bore out the opening statement of counsel. In cross-examination plaintiff said he did not tell the defendant he would charge Mrs. Gwynne on the same lines as he had previously charged him. The movable bridge was a speciality of his own, and no other dentist practised it. The speciality was that, if anything

went wrong, the duplicate could be fitted without another dentist being consulted.

Mr. MACASKIE, on behalf of the defendant, explained that his client had paid £31 10s. into court in satisfaction of plaintiff's claim. He had also paid in a further sum of £20, with a denial of liability. He denied that there was any contract by Mrs. Gwynne to pay £105, and submitted that plaintiff's charge was grossly excessive.

Mr. J. GWYNNE, the defendant, stated that he first made the acquaintance of the plaintiff in July, 1894, when he consulted him with reference to his teeth. Plaintiff at first wanted eighty guineas for attending to his (defendant's) teeth, but he eventually agreed to do the work for thirty guineas. In May last he took his wife to see the plaintiff, who agreed to do what was necessary for Mrs. Gwynne on the same terms as he had charged him (defendant). Plaintiff never said he would charge his regular fees. When he received the account for £105 for four teeth, he protested. He never gave his wife authority to order a duplicate set, or to pay £105. For thirty guineas plaintiff supplied him with five teeth and stopped others.

Mrs. GWYNNE, wife of the defendant, gave corroborative evidence. She denied that she agreed to pay plaintiff £105. When plaintiff brought in the duplicate she told him that her husband would not pay for it. Three days after the teeth had been fitted one of them came off while she was partaking of lunch or dinner. The plaintiff did not supply her with a key.

Mr. BRAY: The key is with the duplicate, which you did not take away.

Mr. TOMES, F.R.S., consulting and practical dentist, and official examiner at the Royal College of Surgeons, stated that work similar to that which plaintiff did for Mrs. Gwynne was being done by hundreds of dentists in this country and America. It was absolutely false to say that there was any particular or special method in the plaintiff's work. It was an average piece of work, and was worth from fifteen to twenty guineas, according to the time occupied. The duplicate could be made for an extra ten guineas, but it appeared to be absolutely useless.

In cross examination witness said the Americans introduced the bridge work. American dentists who conducted their business on proper lines were received with open arms in this country.

Mr. WILLIAM BROMFIELD PATERSON, dental surgeon, and hon. secretary of the British Dental Association, said he agreed with the evidence of the previous witness.

Mr. JUSTICE MATHEW was of opinion that his judgment must be for the defendant, with costs. The amount for which defendant was liable to the plaintiff was thirty guineas, and no more, and that amount had been paid into court. The balance over and above that sum would be paid out to the defendant.

Alleged Dental Association.

AT West Ham Police Court, on Dec. 4, Arthur Warren, described as of 24, Woodgrange Road, Forest Gate, was summoned before Mr. Baggallay, by Mr. G. R. Matland, a dentist, of 265, Romford Road, Forest Gate, for unlawfully taking and using the title of "dentist," implying that he was registered under the Dentists Act of 1878.

Mr. Fred George prosecuted, Mr. Wildey Wright defended.

Mr. GEORGE said the proceedings were taken under Section 3 of the Dentists Act, the defendant having taken and used the title of dentist, but was not registered. The American Dentists' Association had a branch at 22 and 24, Woodgrange Road, where the defendant practised, and the circulars of the Association had the name of H. J. Bradlaugh as the senior dental surgeon, and that gentleman's name was on the register.

Evidence was then called showing that on November 26, a Mrs. Elizabeth Parnell and a Miss Rebecca Beal, both in the employment of Mr. G. R. Matland, called at 22 and 24, Woodgrange Road, and were shown into the surgery from the waiting room by the defendant. Mrs. Parnell asked, "Are you the dentist?" and he said, "Yes, I am the dentist," and when asked if he was Mr. Bradlaugh he said, "No, Mr. Bradlaugh is my senior partner." She asked about three teeth, and had impressions taken for two teeth, and paid 2s. 6d., for which she received a receipt. This was headed, "The American Dentists' Association," chief offices, 6, Grosvenor Street, W., and bore the name of H. J. Bradlaugh, as senior dental surgeon. Mrs. Parnell called at the place later on, but saw no one, and in the evening Mr. Matland called and asked the defendant if he were a dentist. The defendant said "Yes," but when asked the date and nature of his qualification, as his name was not on the Dentists' Register, he said, "I am not registered in this country; I am an American dentist." He was then told that proceedings would be taken against him.

HENRY WILLIAM COTTELL, a registered dentist, of Hastings, was called for the defence, and said that he acted at Woodgrange Road as locum tenens for Mr. Bradlaugh, the manager of the American Dentists' Association. The defendant was in the service of the Association as a mechanical dentist, and there were cases in which mechanical dentists took impressions of the mouth and with ability. The witness, however, always saw the work, and Warren made appointments for him to go to Woodgrange Road. He (witness) had gone there three, four, and five times a week.

By Mr. GEORGE: He had charge of the Grosvenor Street branch and the Woodgrange Road branch. Mr. Bradlaugh also attended, and he also carried on business in Dublin. There were no other registered dentists outside Mr. Bradlaugh employed.

Mr. GEORGE: Is there not a Dr. Phillips at Grosvenor Street?

The WITNESS: Yes.

By Mr. BAGGALLAY : He last saw Mr. Bradlaugh at the end of October. He had had no communication with him in connection with this case ; he was communicated with by Mr. Piper, the secretary, who was in court. The witness had no fixed day or days for attendance at Forest Gate. He went there only by appointment. He was instructed to go there by Dr. Phillips, through Mr. Piper, who was in court.

Mr. BAGGALLAY : If you have no fixed day, how can Warren make appointments for you ?—He would write to say he had made an appointment for a certain time to see a patient.

Mr. BAGGALLAY : Can you tell me when you were last at Woodgrange Road prior to November 26 ?—I am afraid I can't.

Mr. BAGGALLAY : Can you give me a single date or instance when you attended a patient there ?—No, I can't remember one.

Mr. WILDEY WRIGHT said he would call no other witnesses, and in the course of his defence said the American Dentists' Association was composed of qualified practitioners, who employed assistants to begin the work, which was supervised by the qualified practitioners. On the facts he submitted that the witnesses were wrong in stating that the defendant said he was "the" dentist, but whatever he said he had a perfect right to do what he had done.

Mr. BAGGALLAY said the sole question was whether the defendant used the name of dentist, and if he did so, whether he was entitled to by reason of being properly registered. It was clear he was not registered, therefore the question was—did he use the name ? If this were a *bona fide* Association either the manager, Mr. Bradlaugh, or the secretary of the Association would have been called to explain how it was worked. It was a very extraordinary thing that the secretary should be actually in court and not be called as a witness. The only witness called for Mr. Warren was a gentleman who represented that appointments were made for him, and he went down to Woodgrange Road and saw patients ; but when challenged to show his books or a letter, or to give an instance, he was unable to quote a single item in corroboration. Therefore he (Mr. Baggallay) came to the conclusion that the whole Association was "bunkum," and the defendant was not a dentist, but that he represented himself to be a dentist. The fine would be £10 and costs. He (Mr. Baggallay) must say a word about the rivalry Mr. Wildey Wright had made such a lot of. Mr. Matland was perfectly within his right and perfectly justified in taking these proceedings, finding, as he did, that this man was not registered, and was thus carrying on unfair rivalry.

Mr. GEORGE asked for professional costs, and £2 2s. were allowed.

Mr. WILDEY WRIGHT suggested that he might possibly appeal.—*The Morning Advertiser.*

The Strand Barbers' Case.

PAUL BARON, 30, and Henry William Browett, 24, were indicted for conspiracy to defraud, and for obtaining money by false pretences. Mr. C. F. Gill and Mr. Stevenson prosecuted, and Mr. Geoghegan and Mr. Noble defended Baron. In opening the case, Mr. Gill said Baron was a barber, and occupied two shops in the Strand, one at 164 and the other at 47, Strand, and Browett was one of his assistants. The learned counsel described the course of conduct pursued at both these places for a very considerable time, the *modus operandi* being to invite customers while shaving them or cutting their hair to have their teeth scaled, and then, after the operation, to make an exorbitant charge. Evidence having been given, the jury found the prisoners guilty, and Mr. Geoghegan urged mitigating circumstances on behalf of Baron, but the Recorder said that in spite of the friendly warning of the police, he (Baron) had chosen to go on swindling the public. The public must be protected from such a nest of harpies, and sentenced Baron to fifteen months' hard labour, and Browett to twelve months. —*Daily Chronicle*.

REPORTS OF SOCIETIES AND OTHER MEETINGS.

General Medical Council.

November 29, 1895.

SIR RICHARD QUAIN, President, in the Chair.

THE PRESIDENT: I have received the following letter from the British Dental Assistants' Association:—

“British Dental Assistants' Association,

“Secretary's Office,

“5, High Street, Kingsland, N.E.,

“November 27, 1895.

“SIR,—A deputation will wait upon you to-morrow (Friday) in reference to my petition and others at 1.45 p.m., at the Royal College of Physicians. Trusting that you will receive us,

“I remain, Sir,

“Yours most obediently,

“A. L. BURLIN.”

Sir WILLIAM TURNER: I see the deputation is now present. This is entirely out of order, any deputation being present. If a deputation is to be called in, well and good, but at this stage no deputation can be here till the Council has consented to receive it. I move that the deputation withdraw.

Dr. GLOVER: They are entitled to be here as members of the public.

Sir Wm. TURNER: If these gentlemen are to be here as members of the public, I shall move "That the Council consider this question *in camera*."

Sir DYCE DUCKWORTH seconded the motion, which was agreed to.

Strangers then withdrew.

On their re-admission,

The PRESIDENT: I have to inform you that the Council have passed this resolution: "That the Council has already fully considered the question on which the British Dental Assistants' Association wishes to send a deputation to the Council; and not being prepared to depart from the decision of May 29, 1891, cannot receive a deputation on the subject."

The deputation then withdrew.

REPORT OF THE INSPECTOR IN THE QUALIFYING EXAMINATIONS
IN DENTISTRY. NOTICE OF MOTION BY MR. BRYANT.

Mr. BRYANT: I beg to move "that the Report by the Inspector, Mr. C. Tomes, on the Qualifying Examinations in Dentistry of the Faculty of Physicians and Surgeons of Glasgow, together with the remarks by the body inspected, be received and entered in the Minutes." I only ask that it be placed on the Minutes; I do not want it to be considered yet.

Dr. CAMERON: I have to ask the Council to pause before they enter this on the Minutes, all the more as it is a matter which is not going to be considered at this session. My reason I can explain in a single sentence. Those who have read the Report perceive that there is considerable conflict between the Inspector and the Examiner, not on matters of opinion but in regard to matters of fact, and I think that by a little intercommunication between the Inspector and the Council of the Faculty, these difficulties may probably be cleared up. I will explain the matter in this way. At this Board, as at all the Boards of the Corporation in Scotland, each student is examined by two persons—one who acts as assessor and listens to the examination, and notes down at the time on an official paper all the subjects on which the examination takes place. That was done in this case, and we have records of the subjects on which each student was examined. The Inspector has found it to be his duty to

make what is a very serious charge, viz., that two of the six candidates who passed should have been rejected, and he further gives some of the subjects taken up at both of these examinations. But it happens that the subjects as so detailed do not agree with the list of subjects on which any one candidate was examined, so that, as a matter of fact, there is no doubt whatever that he was in error, and that he had got confused in regard to the particular men who were examined. And the Council of the Faculty remark in consequence, "As regards the results of the examination, the Inspector is of opinion that the candidates who passed and failed at the First Examination deserved the respective awards, but that two of the six candidates who passed at the Second Examination should have been rejected.

"Unfortunately the data on which he formed his judgment are not given at all in the case of one of these two candidates, and only to a very small extent in the case of the other. The Council submit that in recording such an opinion the Inspector was bound to state in detail the facts on which it was founded; and the obligation was all the stronger that he had no one with whom to share the responsibility. All that the Council on their part can say on the matter, therefore, is that they have not the materials on which to review the Inspector's judgment. If any over-marking there was, they have certainly no wish to extenuate it. It is simply a case of the Inspector's opinion formed, as has been explained, under circumstances which practically precluded an adequate judgment against that of the Examiner." There will also be found in those remarks by the Body Inspector a statement which I have made that "he gives some of the subjects taken up at both; but it happens that the subjects as so detailed do not agree with the list of subjects on which any one candidate was examined. The Inspector is therefore probably in error on this point. The list of subjects on which the candidate is examined is taken down by the assessor on the candidate's marking schedule. These schedules were in the Inspector's possession for some weeks (as were the written papers); but this discrepancy appears to have escaped him." Under these circumstances I think it is undesirable to make these statements public property, and I have no doubt that before it is necessary really to put this on the minutes, some commnica-

tion between the Inspector and the Council of the Faculty will clear up this matter. I therefore have to ask Mr. Bryant to let this remain off the minutes. I am very sorry I had to be absent at the Dental Committee on account of an accidental delay to the train in which I travelled from Scotland, or I would have mentioned the matter there. I think Mr. Bryant will find it consistent with his duty to allow this to remain off the minutes till we meet again. It will be in accordance, I know, with the wish of the body which I represent.

Mr. BRYANT: There is not the least objection to the suggestion of Dr. Cameron.

COMMUNICATION FROM THE BRITISH DENTAL ASSOCIATION.

The REGISTRAR: The next business is to receive the following communication from the British Dental Association:—

“British Dental Association

“(Incorporated June 3, 1880),

“40, Leicester Square, London, W.C.,

“November 25, 1895.

“DEAR SIR,—I beg to submit the following matter of urgency to the attention of the Medical Council at its present session.

“Joseph Stromier, of Glasgow, having obtained the D.D.S. diploma of Michigan University, U.S.A., presented himself, last October, for Examination at the Faculty of Physicians and Surgeons, Glasgow, for the L.D.S. Diploma. He submitted as his dental curriculum that of the Michigan College, and upon that curriculum he was admitted to the L.D.S. Examination of the Faculty. He failed in the Examination, but it is his intention to present himself again in April next.

“The point I wish to draw the Council's attention to is this—the Faculty of Physicians and Surgeons, Glasgow, *accepted the dental curriculum of Michigan*, a curriculum no longer recognised as satisfactory by the Medical Council, in lieu of their own, and admitted Stromier to Examination. In doing so, I venture to submit that the action of the Glasgow Faculty is *ultra vires*; and I beg the Council to take steps, as they may deem necessary, to prevent a recurrence of such action.

“I am, dear Sir,

“Yours truly,

“W. B. PATERSON,

“Hon. Secretary.

“W. J. C. MILLER, Esq., Registrar.”

Dr. CAMERON: In regard to this I have really no information; I had not heard of this case until I saw it here now.

Mr. BRYANT: Was not that before the Dental Committee?

Dr. BRUCE: It is a pity that such accusations as this should not be made direct.

Mr. WHEELHOUSE: I beg to move that this letter be received and entered on the minutes.

Dr. CAMERON: Surely we could have this settled by the Dental Committee before it is put on the minutes; one does not know the truth of it in the least. I will move "That this communication be referred to the Dental Education and Examination committee."

Dr. McVAIL: I will second that.

Dr. Cameron's motion was agreed to.

Monday, December 2.

SIR RICHARD QUAIN, President, in the Chair.

The Report of the Students' Registration Committee was adopted and entered on the minutes. The following is the portion of the Report relating to dental business.

II.—DENTAL BUSINESS.

1. From the following students, who desired to antedate their commencement of professional study, their Preliminary Examination having been fully completed before they commenced:—

Name.	Date of Preliminary Examination.	Date of Commencement of Professional Study.	Date of Registration.	Date to which Student desired to be Antedated.
Carpenter, Alex. C....	April, '94	Oct. 1, '93	June 13, '94	April 1, '94
Colyer, Stanley W. R.	Mar., '91	May 1, '91	Oct. 3, '93	May 1, '91
Crombie, Walter P....	April, '89	Jan. 3, '90	Aug. 15, '95	Jan. 3, '90
Fyfe, David	April, '95	May 17, '95	Oct. 28, '95	May 17, '95
Goldfoot, Moseley M.	Sept., '93	Oct. 21, '93	Oct. 10, '95	Nov. 10, '93
Moore, Hubert Wm. .	June, '92	Aug. 11, '90	July 29, '92	June 1, '92
Mullord, Charles	Dec., '90	Feb. 11, '84	Jan. 30, '93	May 1, '92
Ryle, Arthur B.	Dec., '88	Sept. 10, '91	Feb. 1, '92	Sept. 10, '91
Steveni, Geo. Henshall	June, '95	Jan. 1, '95	Oct. 1, '95	June 1, '95
Stoner, John W.	Dec., '92	Mar. 31, '84	Jan. 26, '93	Dec. 8, '92
Tebbitt, Ernest R. ...	Dec., '91	Sept. 29, '91	Dec. 31, '91	Dec. 1, '91
White, Eustace B. L.	June, '95	Sept. 5, '92	July 26, '95	June 1, '95

Resolved:—"That these applications be *acceded to.*"

2. From the following student, who desired to antedate his Preliminary Examination, having been only deficient in one subject at the time of commencement of professional study:—

Name.	Dates of Preliminary Examinations.	Date of Commencement of Professional Study.	Date of Registration.	Subject in which deficient.	Date to which Student desired to be Antedated.
Newton, Joseph R.	{ Sept., '92 Dec., '92 }	June 20, '88	Jan. 20, '93	French	Sept. 1, '92

Resolved:—"That this application be *not acceded to*."

3. From the following student, who desired to antedate, his Preliminary Examination having been deficient in more than one subject at the time of commencement of professional study:—

Name.	Dates of Preliminary Examinations.	Date of Commencement of Professional Study.	Date of Registration.	Subjects in which deficient.	Date to which Student desired to be Antedated.
Mountain, Wm.	{ Aug., '91 Aug., '93 Aug., '95 }	Nov. 2, '92	Aug. 21, '95	{ Algebra Euclid French }	Nov. 2, '92

Resolved:—"That this application be *not acceded to*."

4. From John B. Watson, who passed in all the subjects of the Preliminary in October, 1891, except Latin, and who passed in that subject and became registered in April, 1894, requesting that he might antedate to October 1, 1891, on the ground that during the years 1892-1893 he was suffering from hyperæsthesia of the retina, respecting which he sends a medical certificate.

Resolved:—"That this application be *acceded to*."

Sir DYCE DUCKWORTH: I beg to move the following resolution:—

"That on and after January, 1897, the registration of students under Resolution XI., of June 2, 1891, shall be discontinued, so far as concerns the preliminary examinations of the Pharmaceutical Society."

I may say that the Committee have sat and heard all the cases mentioned in the report, and it is satisfactory to note that the students are coming more under the regulations of the Council. It has been the custom previously to allow

students who have passed the preliminary examination of the Pharmaceutical Society to register as medical students on taking the previously omitted subjects, but the Council wish to discourage that in future, and to encourage students to enter the profession who can show that they have passed a good preliminary education before they start on professional work.

Dr. MACALISTER: I beg to second the motion.

The motion was agreed to.

COMMUNICATION FROM THE MIDLAND BRANCH OF THE BRITISH DENTAL ASSOCIATION.

The following communication from the Midland Branch of the British Dental Association was on the agenda paper of the Council, and was, we understand, received and entered on the minutes:—

“British Dental Association (Midland Branch).

“*Hon. Treasurer.*—G. G. CAMPION, 254, Oxford Road, Manchester.

“*Hon. Secretary.*—I. RENSRAW, Drake Street, Rochdale.

“May 30, 1895.

“DEAR SIR,—I am desired by the Members of the Midland Branch of the B.D.A. to convey to you the enclosed Resolution, with the request that you will place it before the General Medical Council at its next meeting.

“I am, dear Sir,

“Yours truly,

“I. RENSRAW, *Hon. Sec.*

“W. J. C. MILLER, B.A., Esq.,

“*Registrar of the General Medical Council.*”

“*Resolved*:—That the best thanks of the members of the Midland Branch of the British Dental Association, assembled at Bradford, be given to the General Medical Council, for their resolution in regard to Dental Advertising, the Branch expressing the hope that the Council would continue its policy until such advertising was suppressed.

“I. RENSRAW, *Hon. Sec.*”

ASSOCIATION OF UNREGISTERED DENTAL ASSISTANTS.

A memorial from an Association of Unregistered Dental Assistants was also presented to the Council.

The Odontological Society of Great Britain.

THE usual monthly meeting of this Society was held on the 2nd inst., Mr. DAVID HEPBURN, President, in the chair. There was a very large attendance of members.

The minutes of the previous meeting having been read and confirmed, Messrs. J. Sim Wallace, Frank C. Porter, and Francis Flintan, having signed the obligation book, were admitted as members.

The following nominations are before the council. As resident members :—FREDERICK LAWSON DODD, L.R.C.P.Lond., M.R.C.S. Eng., L.D.S.Eng., 41, Wimpole Street, Cavendish Square, W.; WALTER S. NOWELL, M.A.Cantab., L.D.S.Eng., 41, Wimpole Street, Cavendish Square, W. As non-resident members :—ERNEST CATT, L.D.S.I., D.D.S.Mich., 11, Valley Bridge, Scarborough; W. F. CORNELIUS, L.D.S.Eng., 29, Orchard Gardens, Teignmouth.

Mr. CHARLES WHITE presented some old sets of teeth to the museum, one which had been in his possession for fifty years, was worn by Turner the artist, and gave a very good idea of the way in which teeth were made in those days.

The PRESIDENT expressed the hope that members who had any of these rare specimens, would send them to the museum where they would always find a home.

Mr. H. L. ALBERT presented a model illustrating the case of an upper central which, having been completely displaced by a fall out of bed when the patient was 8 years old, was replaced some eight or ten hours afterwards, after filling the root with gold. The tooth did very well, but never grew. It was retained in the mouth about fourteen years, and about a month ago the young man brought him the crown of the tooth which was a mere cap of enamel, all the dentine being absorbed.

The PRESIDENT said the case was interesting, especially as to the arrest of development. In a case under his own notice, a child met with an accident by which the incisors were displaced. They were replaced some thirty-six hours afterwards, and retained by the regulation plate she was wearing at the time. He saw her some four or five years after the accident, and the teeth were still firm.

Mr. MUMMERY read for Dr. Miller of Berlin the following communication on the Translucent Zone :—

At the ordinary monthly meeting of the Odontological Society of Great Britain, held May 6, 1895, Mr. F. J. Bennett presented the results of investigations concerning the nature of the transparent zone occurring in connection with caries of the teeth, which, in his opinion, seemed to justify the conclusion that this appearance is due to nothing more than a partial decalcification of the dentine. Mr. Bennett bases his conclusion upon the fact that enlarged and thickened tubes might be demonstrated in the transparent parts.

It is not my intention, however, to approach the subject at the present time by the aid of the microscope, but rather to bring up some other points, which appear to me to be well worth considering :—

(1) If the transparent zone in dentine is nothing more than a partial decalcification which occurs alike in living and in dead teeth, then it should, apparently, be a very simple matter to reproduce it artificially ; up to the present, however, no one has succeeded in doing so.

(2) Where decalcification of the dentine takes places, as in caries, the process advances in a fairly regular line, so that if we remove the softened dentine from a cavity of decay, we have a smooth, regular, concave surface. We sometimes find, it is true, the margin between the decalcified and the hard dentine irregular and jagged, but scarcely, I think, to such an extent as the inner border of the transparent zone. And in particular we never find narrow bands or spurs of decalcified dentine extending quite to the pulp chamber, as we see them in the transparent zone.

(3) Where acid acts upon the dentine at any point, as in a fissure, we find the decalcification extending laterally as well as in the direction of the dentinal tubules, and, in fact, almost, if not quite, as rapidly in the former as in the latter direction. Should we not therefore expect to find the transparent zone, if due only to decalcification, on the lateral margins as well as toward the pulp chamber ?

(4) I have already, in another place, given expression to the conviction that the transparent zone does not form in dead teeth. I have recently ground sections from about a dozen different teeth worn on plates, and found no transparent zone in the specimens which I examined. I think we should, moreover, bear in mind that the presence of a slight transparency in preparations from dead teeth does not furnish evidence of the non-vital origin of the same, since the transparency may have been present at the time the teeth were put on the plate or pivot. We know that a microscopic defect of the enamel surface, scarcely visible to the naked eye, may be the cause of extensive transparency of the dentine. These teeth sometimes show a slight diffuse transparency, extending over a large area of the section, but having no connection with caries or any other apparent pathological process. I am inclined to believe that diffuse transparency may be only the result of a slight difference in structure, causing a difference in the permeability of the dentine to differences in thickness, &c.

(5) We find typical cases of transparent dentine in places where the action of acids from without appears to be entirely excluded. Leaving the transparency of the roots of senile teeth out of account, we find transparency in cases where the enamel of the cusps has been worn down, even though the dentine may not be exposed thereby, and no trace of caries present. I have seen a well-marked case of transparency

in a molar, in which the enamel of the approximal surface had been slightly worn away by friction against its neighbour.

(6) Chemical analysis does not give results which are consistent with the theory of decalcification. Some years ago I made an analysis myself, and had another made by a Berlin chemist, Dr. Jeserich. My analysis gave 71.9 per cent. ashes, while normal dentine from the same teeth gave 72.1 per cent., a difference quite within the limits of the errors of experiment. The analysis of Dr. Jeserich gave for transparent dentine 69.5 per cent., for normal dentine from the same teeth 68 per cent. These results do not indicate any decalcification. The material was, in each case, obtained from about twenty teeth.

(7) The action of colouring matters upon transparent dentine is not what we should expect if a partial decalcification were present. It is well known that sound dentine does not readily stain with most of the dyes commonly in use, such as carmine, eosine, &c. ; partially decalcified dentine, on the other hand, takes on stains very readily. I have found an aqueous solution of eosine a valuable means of diagnosing the presence of slight decalcifications. If a drop of strong mineral acid (nitric, hydrochloric) acts upon ivory for a single second, a subsequent application of the eosine solution will immediately produce a bright red spot where the acid came in contact with the ivory. A minute drop of a 1 per cent. solution of acetic or lactic acid will bring about a sufficient decalcification in twenty seconds to cause a deeper staining with the eosine solution. So, too, we find carious dentine becoming deeply stained by eosine. If now transparent dentine represents a partial decalcification, should we not expect it also to stain more readily than normal dentine? This is, however, not the case ; on the contrary, we find the transparent dentine even more difficult to stain than the normal.

There are still some phenomena connected with the transparent zone to which I may hastily call attention. We often find the zone of transparent dentine in beginning caries bordered on each side by opaque stripes, which, under the microscope, appear almost black, and within which the tubules are seen to be filled with irregular, angular granules or rod-shaped elements. These opaque zones we find almost constantly in some way associated with the transparent zones, usually separating the latter from the normal dentine or filling out the space between the transparent zone and the pulp.

In many cases we find the opaque zone where we might expect the transparent zone. In the wearing down of teeth by mastication I have found cases of transparency, more frequently, however, broad opaque zones. The appearances are such as to give rise to the question whether the opaque zone may not be a forerunner of the transparent zone.

These notes are by no means intended to give an exhaustive treatment of the subject ; on the contrary, I must acknowledge that for my

self the question appears more complicated and is farther from a definite solution than I thought it to be some months or even years ago.

Mr. F. J. BENNETT said Dr. Miller objected to the proposition that the area of translucency was due to partial decalcification of dentine and nothing more. He (Mr. Bennett) had not said that it was due "to partial decalcification of dentine and nothing more," the term was used not by himself but by a subsequent speaker. His point was to disprove the vital theory. Dr. Miller asserted that an increased calcification or a decalcification did take place in translucency, and said that this was sufficiently proved by chemical analysis, which in the case of twenty teeth with translucent areas showed that the ashes from the translucent area came to 71.9, whereas ordinary dentine yielded 72.1. So that starting to prove increased calcification this was the result: 71.9 in the translucent area, positively smaller than in normal dentine which was 72.1. Dr. Miller was therefore convicted upon his own evidence. Passing on to the question of natural teeth mounted on plates, Mr. Bennett handed round some specimens by which he claimed to show that the translucent zone appeared in artificially calcified teeth, and it was of course admitted by the vitalists that if it could be proved that there was a translucent zone connected with caries even in one such specimen, the downfall of their theory was inevitable, it being inconceivable that vital action could take place in a dead tooth.

Mr. MUMMERY said Dr. Miller looked upon the cause of the translucent zone as not in the least degree decided, but as still quite a matter of investigation. He regarded the evidence against the theory of decalcification as very strong; with regard to the chemical analysis it was almost a case of hair splitting, the differences were so very slight, and as Dr. Miller had written, might be quite within the limit of an error in the experiment.

Mr. L. MATHESON read a paper on "A Few Practical Points":—

I have to present for your notice one or two considerations in respect of some practical details of everyday work.

To begin with, there are one or two forms of probes which I should like to mention.

One is a form of probe that I prefer to any other for the examination and definition of roots more or less hidden, and of the cervical margins of labial cavities extending below the edge of the gum.

The straight, tapering shank is bent upwards at a very slight angle, for about a quarter of an inch, and then downwards for an inch, at an angle of 45 degrees. This probe is not blunt, but pointed.

The second kind of probe is one that is tapered to a fine point, and is quite straight, except at the extreme tip, which is bent at a right angle to the shaft, for the length of a sixteenth of an inch or less. Similar instruments are a pair of curved probes, of the form commonly

used, but having the rectangular tip of the one just mentioned. These three shapes are invaluable for discovering hidden approximal cavities.

In connection with rubber dam, I would say a word in favour of the use of Fernald's dam holder. The wire frame which goes by this name—or, rather, a slight modification of it—I have now used for some years, to the entire exclusion of retractors of any kind, the wire frame so very markedly diminishing the discomfort of one's patients when the rubber is used.

The discomfort of one's patients is diminished in three ways. In the first place, the frame, to a large extent, does away with the bridled, gagged feeling that the retractor produces. In the second place, the rubber not being drawn closely against the cheeks, moisture does not pass by capillary attraction on to the skin of the face, and one gets rid of the slimy, messy condition of things so common where retractors are used. In the third place, no band being required round the back of the head, the necessity no longer exists of having to bring into close contact with one person's head the elastic or tape that has been in close contact with other people's heads.

Another matter that I feel strongly upon is the use—or rather, the abuse—of clamps with the rubber dam. In very many cases where clamps are commonly used, ligatures would do as well or better; and, as a matter of practice, it may be maintained that the rubber can be kept in position without clamps on all teeth, except lower molars and second upper molars. Occasionally the first upper molar requires clamping, and very occasionally a bicuspid. By the well-known device of a bead, or a bit of amadou knotted into the silk, a ligature will often effect the same purpose as a clamp, and with very much less distress to the patient.

Tin and gold as a filling material is another point I would draw attention to. Used in the form of tape or loose rope, in the proportion of two sheets of Abbey's non-cohesive gold, No. 4, to one sheet of White's tin, No. 4, this combination is a very valuable one, as I am sure many here present can testify. In many instances it is not merely a good alternative to gold, but it is much superior to the precious metal used alone. In particular, it is most useful in dealing with coronal and labial cavities in second and third molars, especially in small and medium-sized cavities, and in teeth of a low standard of strength. The rapidity with which it can be safely worked makes it extremely useful in cavities far back in the mouth. And the fact that absolute dryness is not essential to its successful working makes it pre-eminently suitable for cases where there is a difficulty in the exclusion of moisture. And further, there seems to be no doubt that tin, and tin and gold together do exercise a marked preservative action on teeth of loose structure or imperfect calcification.

Used in large cavities much exposed to the wear and tear of mastication, it is a good plan to face the filling with gold alone, leaving a

thin marginal line of tin and gold or tin alone. This does away with the objection that in extensive coronal fillings tin and gold presents, in the course of time, an uneven surface.

I have spoken particularly of molar cavities, but in hidden approximal cavities also the combination of the two metals does excellent service; and so much do I value it, that frequently even in incisor cavities I use a thin layer of it on the palato-cervical margins of weak teeth.

Tin and gold works, of course, non-cohesively, and is quite unsuitable for use with the mallet; and this brings me to a part of my paper which deals, briefly though it may be, with the comparative merits of hand pressure and mallet work.

That a fine, dense, smooth surface can be more readily obtained; that more gold can be packed into a given space, and the hardness, compactness, and specific gravity of the filling greatly increased; and that a good deal of time and strength, on the part of the dentist, may be saved by the use of the mallet, as compared with hand pressure, all these facts must be admitted. But what I want to point out is this—that a splendid surface does not by any means imply undercuts soundly filled; that perfect cohesion and high specific gravity are quite compatible with imperfect adaptation to the walls of a cavity: and that, when time is balanced against comfort, it is not always in favour of time that the scale dips.

It will be urged, quite rightly, that a good operator will take more care over the undercuts than over the surface of his fillings, and that he will pack them perfectly, using, if necessary, in deep angular corners and places difficult of access, either a flooring of oxy-phosphate, or gold inserted by hand pressure, or both, so producing a plug the solidity of which cannot be questioned. This may be freely granted, and yet it may remain true that it is easier to overlook and leave faulty the proper treatment of undercuts with the mallet than with hand pressure. This is more especially to be noticed in such positions as the overhanging anterior walls of coronal cavities in molars, and those parts of incisor cavities near the cutting edge.

With regard to close adaptation of the gold to the walls, and especially the margins of the cavity treated, it will, I know, be hotly contended that it is just here that the value of the mallet so conspicuously shows itself. If it does, it is too often at the risk of cracked or bruised enamel; and even waiving this, I cannot help feeling very strongly that there is a serious danger, in the vibratory nature of the mallet's blow, of shaking the filling *en masse*, and so of obtaining a compacted homogeneous nugget of gold, at the expense of that clinging to the walls of the cavity which is so desirable, and which is so characteristic of good hand pressure work. This is a difficult point to prove, and I may possibly be mistaken, but it is the only way in which I can explain some of the failures I have seen in malleted fillings.

As to the important question of time, it is possible, of course, to say that it affects the patient as much as it does the operator—that the former is as glad to get the work done quickly as the latter is. Other things being equal, this may be so; but I maintain that, to the vast majority of patients, the gain in time afforded by the use of the mallet is as nothing compared to the comfort of doing without it. And herein lies my chief indictment against the mallet, namely, the distress that its use occasions. In sober earnest, I assert my conviction that hand pressure, with a due expenditure of time and care, and the use of finely serrated pluggers, may be relied upon, in the long run, to give quite as good results as any other method, and, in some respects, better results.

In weighing results, the all-important matter of durability stands first. Given two teeth of average structure, presenting similar cavities, and with operators of equal ability to fill them—the one using a mallet and the other hand pressure—I think that the latter may be depended on to hold its own; I go so far as to say it will—in approximal cavities, and especially in teeth of weak structure—more than hold its own.

From the vexed question that I have ventured to touch upon, let me turn for a few moments to the question of contour filling. The longer I practise the more value do I set upon contour filling as a means of preserving the teeth from caries; that is to say, when the filling can be so shaped as to knuckle quite closely to the neighbouring tooth or filling; so closely as to prevent the passage of food towards the interstitial gum. If this close approximation to the adjoining tooth cannot be obtained, it is almost needless to say that the contouring of the filling becomes not only useless, but generally worse than useless, inasmuch as it rather favours than prevents the lodgment of food at the gum margin. And whilst *such* contour fillings are to be deprecated, so to, in my opinion, are those extensive edifices which, having no preservative influence, are built up solely to restore the original outline of the tooth under treatment. They are, to my mind, uncalled for, alike from a surgical, an artistic, and a useful point of view. Likewise uncalled for, I think, and undesirable from the standpoint of our patient's best welfare, are huge gold contour fillings in molars. Where filling is admissible, a carefully inserted and carefully finished amalgam serves the required purpose best in the great majority of cases; and where there is very extensive disease, both mesial and distal, gold collar crowns, duly and properly adapted, afford the most satisfactory means of restoration. In the insertion of large contour amalgams I have lately found great assistance in the use of the new screws just introduced: their application is very simple and easy, and they form a valuable addition to the ordinary Howe screw post, which is so convenient in the case of dead teeth.

I mentioned just now the valuable services rendered by collar

crowns. I will, with your permission, occupy a few more minutes in drawing your attention to two modifications of the usual form of these crowns, both of which, I think, fill a niche of their own. The first of these was introduced by Mr. Whittaker, of Manchester, and consists of a form of crown especially adapted for laterals and centrals. In trimming the root, Mr. Whittaker leaves intact the palatal enamel which, in most cases, projects considerably beyond the neck, where cementum and enamel meet. This retention of the palatal enamel necessitates such a special contouring of the palatal portion of the collar as that its gingival margin shall fit the neck of the tooth accurately, while the other margin shall give room for the projecting enamel; in other words, the gingival margin has to be less in circumference than the other. Consequently, the collar, when fitted, can only be got into place by carrying up the palatal portion first, and then springing the labial portion over the labial margin of the root. It is claimed that this shape of collar adds greatly to the stability of the crown, inasmuch as it enables the latter absolutely to resist the great forward pressure sometimes exerted by the bite. The method of springing the collar into place precludes the use of a pin in the pump canal; and, indeed, it is urged that this is an advantage, as the pin becomes quite unnecessary.

This form of crown I have used in one or two instances lately with much satisfaction.

Mr. ROBBINS said it spoke well for the Society that they could have in the same way a scientific paper like Dr. Miller's and a practical paper like Mr. Matheson's. It was a paper bristling with points concerning their every-day practice. As to hand pressure and malleting, he spoke as a patient of considerable experience, having in his mouth twenty-six fillings, put in by one of the most thorough men he knew, but he could not on humanitarian grounds ask nineteen-twentieths of his patients to endure those beautiful little retaining pits, and the malleting directly upon the most tender part of the tooth. If they could get good durable filling by hand pressure, there was something to be said on that score. He had suggested, though it was somewhat smiled at elsewhere, the use of mat gold for the first third of the filling where it was not wished to exaggerate contour, and even where the tooth was very fragile, underlying that with oxy-phosphate, setting the mat gold in, like blocks in a wood pavement; with firm but gentle hand pressure the surface could be worked down and brought up to within one third of the finish. Then if gold foil was used the malleting would not be so serious a matter, and they might have a cohesive surface with much more comfort to the patient. He agreed with Mr. Matheson that as much value to the patient could be got out of a good honest amalgam for large molar cavities, as by large gold fillings which are so trying to both patient and operator.

Mr. W. HERN said there was a time when he thought no good

work could be done in contouring with anything but cohesive gold, using the mallet. He now believed that very excellent work could be done with hand pressure. One reason, however, why the mallet was tabooed, was because it was frequently used with a blow far out of proportion to the requirements. Cohesion did not depend so much on the blow as on going accurately over the whole surface rather than trusting to a heavy blow. Malleting gold under overhanging edges had been referred to, but they knew that not even soft gold could be brought under overhanging edges. Contouring was no doubt the most important thing in their work. He agreed as to the value of collar crowns, seeing that they could be contoured in a way that could not be done with any other fixed crown.

Mr. G. H. BADCOCK said he had used tin and gold in the way described by Mr. Matheson for many years, and with more success than any other filling material. He had used it chiefly as described, with one sheet of No. 4 tin between two sheets of No. 4 gold, but latterly he had used No. 5 gold simply to improve the colour of the filling. He was trying to get some No. 3 tin to use with No. 4 gold, and so obtain the same result with more ease to himself.

Mr. DENISON PEDLEY said, in considering the question of hand pressure and malleting, there were two very important factors to be considered--the tooth and the patient. His partner was recently consulted by a young lady, aged 21, with regard to caries. A large portion of the teeth were very carious, but on carefully examining her mouth he came across a very beautiful gold filling. Asking her why, with that good gold filling in her mouth, she had allowed her teeth to go so long, she replied that being taken, when 16, to one of the best dentists, she had such a terrible time of it with the mallet that she vowed never to have another tooth stopped. He always used hand pressure until he had gauged the nerves of his patient, but believed that a combination of the two, commencing with hand pressure and finishing off with the mallet, was the best method they could have, though no definite law could be laid down on the subject.

Mr. BEADNELL GILL, from many years' experience of mallet work, confessed his great appreciation of it. He thought, however, that unnecessary pain was often inflicted, and that those who still advocated the use of the mallet might continue it with success and saving of time to themselves and their patients by a judicious management as to the direction of their blows. One great point was to catch the right time for filling the teeth. With regard to filling material, he believed that mat gold or crystal gold were well worth a trial. He had filled with crystal gold for over twenty years, and it was still his special favourite, although he had tried every other kind of gold introduced from time to time. There was no better all round filling; it could be used either cohesive or non-cohesive, by hand pressure or by malleting. He knew of fillings done eighteen years ago with half

crystal gold put into the most frail and delicate central and lower incisors of girls of 14 or 16, entirely by hand pressure, which were standing good to this day. At the same time he believed that by a judicious use of the mallet time might be saved to both operator and patient, and no unnecessary distress occasioned.

Mr. BALDWIN would not like to do away with the mallet entirely. Hand pressure was, perhaps, the more useful, but the mallet had its special uses especially in finishing. When a filling was of any size it would certainly produce a better continuous surface, taking a higher finish, and being therefore less visible afterwards. It also did away with the great tendency of hand pressure instruments to slip, which was sometimes a serious thing both for patient and operator, especially when working with a mirror. He had known an instrument stick into the forehead of the operator very near the eye through slipping in this way.

Mr. VANDERPANT said in his own experience he found very good results from the old-fashioned hand mallet, which could be used with very great precision, and the force of the blow modified. No doubt that mallet had long been superseded, but there was still room left for its advantageous use.

Mr. MATHESON in replying, said he had perhaps exaggerated somewhat the merits of hand pressure, partly because that was the only kind of work he knew personally, and partly as a sort of counterblast to the exaggerations undoubtedly made in favour of malleting. He was very much indebted to Mr. Badcock for his suggestion as to a larger proportion of gold in making tin and gold fillings. The one great disadvantage of tin and gold filling being their appearance, he should certainly try Mr. Badcock's method.

The PRESIDENT having thanked the readers of papers and communications, the Society adjourned till Jan. 13, 1896.

National Dental Hospital.

THE annual dinner of the past and present students of this Institution took place on November 22, at the Dental Hospital, Sir Dyce Duckworth presiding. There was a large attendance, amongst those present being Sir J. Williams, Sir J. Crichton-Browne, Mr. Christopher Heath and Professor F. J. Roberts.

After the usual loyal toasts, the Chairman presented the prizes and certificates gained during the past year, medals being awarded to the following :—S. F. Rose (dental anatomy), E. A. Wheeler and A. E. Relph (dental surgery), W. F. Hill (dental mechanics), H. W. Moore (dental surgery and dental metallurgy), C. Fox (dental materia medica), and Mr. H. J. Relph (operative dental surgery). The

entrance exhibition was won by H. V. Tattersall, and the Students' Society prize by W. Jones.

The CHAIRMAN, in proposing the toast of the evening, remarked that during the past twenty-five years a great advance had been made in the social position and professional attainments of the modern dentist. There were, however, some spots upon the profession which needed to be wiped out. The ugliest spots he could see were those caused by persons who called themselves dentists advertising in an undue, unfair, and extravagant way. This was to be accounted for by the fact that a large number of persons had been admitted into the ranks of the profession who, being little more than artisans, had not the instincts of gentlemen. The examinations for the position of L.D.S., however, were sufficient to inspire full confidence on the part of the public, and he believed that people were at last coming to learn the difference between an inflated impostor who made use of hideous advertisements and exhibited cases of horrible things outside his house and the man who really had knowledge and scientific attainments.

Mr. SIDNEY SPOKES briefly responded.

Sir J. CRICHTON-BROWNE, in proposing "The Past and Present Students," spoke of the excellent work the Hospital and College were doing, and of the success which had attended them.

Messrs. HUMBY and H. RELPH responded, and other toasts followed.

Edinburgh Dental Students' Society.

THE opening meeting of the winter session was held in the Board Room of the New Hospital, Chambers Street, Edinburgh, on November 11. There were present about thirty-five members, including Mr. W. Bowman MacLeod (Dean of the Hospital). Mr. J. Malcolm, L.D.S. (the President), was in the chair.

Mr. OSWALD FERGUS, L.D.S., D.D.S. (Glasgow) read a very interesting communication on "Immediate Root Treatment," giving a short demonstration at the end. Mr. Fergus commenced by impressing upon his hearers that he did not claim that this is the only method by which to treat roots, but explained that it is a method by which he himself has had phenomenal success, and only wished to bring it before his audience that they might have an opportunity of testing it for themselves. Mr. Fergus pointed out that immediate root-filling was not by any means a new idea, quoting from the first edition of Tomes' "Dental Surgery" in support of this, and also that the method which he was about to give his experiences with was not original, but one which Dr. Callhan advocated in the *Cosmos* of Dec., 1894, and which he had been led to try, in order to compare it with other methods in

vogue at the present day. Mr. Fergus divided roots into three classes : (1) with pulp so injured that destruction becomes imperative ; (2) septic roots ; (3) so-called empty roots ; and claimed that one method was applicable to all three. His method consists of washing the root out with sulphuric acid (1 in 40 solution), and then washing out with bicarbonate of soda (saturated solution), and then filling immediately in the ordinary way. Mr. Fergus gave his experiences in over 100 cases, and whilst not claiming that his method is perfection, or the only one which ought to be used, yet finds it invariably successful.

Mr. MACLEOD thanked Mr. Fergus for his communication, and moved a vote of thanks, which was heartily accorded.

On Monday evening, Dec. 2, the President, Mr. J. Malcolm, L.D.S., in the chair, the "JOURNAL OF THE BRITISH DENTAL ASSOCIATION for November" was the subject of a discussion, opened by Messrs. J. R. Nash, C. A. Lightfoot, and J. W. E. Stuart, and continued by Messrs. Friend, Lindsay, L.D.S., Young, L.D.S., Routledge, Gregory, Coltman, Walkinshaw, and Malcolm, L.D.S.

Thirteen new members were admitted at this meeting.

Dental Hospital of London : Past and Present Students' Dinner.

THE annual gathering of the past and present students of this hospital was held at the Café Royal, on Saturday, November 30. The chair was taken by Mr. F. Canton, and the gathering was, from a social point, a distinct success. We noticed with pleasure that for once dental politics did not occupy too prominent a position in the after-dinner speeches. An excellent selection of music was given under the direction of Mr. Schartau, an old favourite at these gatherings. The toast list was not a lengthy one, and included, in addition to the usual loyal ones, that of the "Dental Hospital and School," The Visitors" and "The Chairman."

ODONTO-CHIRURGICAL SOCIETY.—The second Ordinary Meeting of the Odonto-Chirurgical Society (Session 1895-96) was held in the Rooms, 31, Chambers Street, Edinburgh, on Thursday, December 12, at 7.30 p.m., Mr. J. Stewart Durward, L.D.S., President, in the chair. Casual Communications were brought forward by Mr. C. F. Sutcliffe (South Shields):—"Model of Irregular Teeth of a Male Patient, 19 years of age, with Explanation of Treatment by Immediate Torsion;" and Mr. J. T. Jameson (Newcastle):—"Models, showing Hutchinson's Teeth, with direct history of Syphilis."

REVIEWS AND NOTICES OF BOOKS.

UTILITE DE LA PHOTOGRAPHIE DANS LES RECHERCHES D'HISTOLOGIE ET DE BACTERIOLOGIE.

Par M. J. CHOQUET. Chateauroux : Imprim. et Stéréotyp., A. Majesté et L. Bouchardeau, 2, Rue Gutenberg, Paris. 1895.

To learn the latest developments and advancements of any science is always interesting ; the introduction of new processes year by year gives greater facilities for the proper performance of trustworthy methods, and tends to a more complete knowledge of a subject. We therefore turn with pleasure to a recent paper bearing the above title, which was read by the author at the Dental Congress held at Bordeaux in August, 1895. The paper gives a concise *résumé* of the technics of photo-micrography, as viewed from the standpoint of the progressive French dental histologist of the present day.

At the commencement of his *brochure*, M. Choquet speaks of the usefulness of the art, then compares camera lucida drawings with photo-micrographs, and describes the necessary apparatus, giving preference to microscope and camera of a vertical form. The use of a lamp with a round wick is recommended in all cases, and the advantages derived from the employment of isochromatic plates commented upon. Linnière plates, series A and B, are chiefly used, and seem to possess properties specially suitable for the correct rendering of the colour values of the stains to which the tissues have been subjected. The former are sensitive to the yellows and greens, the latter to the yellows and reds; and their combinations with certain coloured sections is obvious. Much importance is laid, in this paper, on the staining of tissues, and help in their choice is given. Thus M. Choquet considers Bismarck brown the most useful of all colouring reagents, being capable of producing great delicacy of detail and good negatives with ordinary plates. In their order of usefulness are next placed fuchsine, Gram's stains, violets and blues, especially Löffler's methylene blue.

To exhibit the flagellated bacilli of typhoid fever and pneumonia, Van Ermengen's method of staining is spoken of with the utmost confidence. In the words of the author we are told that "cette méthode est appelée à remplacer tous les autres modes de coloration, car les résultats obtenus sont

très merveilleux." Briefly, the process consists of passing a drop of the culture through a fixing bath of osmic and tannic acids, staining with silver nitrate, reducing with gallic and tannic acids and acetate of soda, finally staining again with silver, and mounting in Canada balsam. Thus the flagella of the bacteria are stained.

M. Choquet agrees with Pfitzner in doubly staining tissues with safranine, and an impregnation of gold chloride, and Renant in the use of eosine and silver nitrate.

He concludes by giving a good hint as to the photographing large portions of the maxilla or mandible with teeth *in situ*. A projection lantern, fitted with an ordinary photographic lens, throws on a screen, on a wall, an image of the parts of the object; a sensitive plate receives this image after focussing; one can thus easily and rapidly obtain a good negative.

Throughout, this short monograph is full of excellent suggestions, and is well worthy of perusal by English photomicrographers.

DENTAL MATERIA MEDICA AND THERAPEUTICS. By JAMES STOCKEN. Fourth edition, revised by Leslie M. Stocken and J. O. Butcher, 1895. London: H. K. Lewis.

Few would claim that dental literature has kept pace with the immense strides taken by our specialty of late years; and there is, perhaps, no subject which has received such inadequate attention as that of therapeutics. To say that the average dental student, who is handling drugs every day of his life, is delightfully ignorant of the action and uses of the very agents which he empirically employs, is to state a bald fact which is but too apparent to those who have any experience of the matter. This is in great part due to the absence of a book on the subject which, while of sufficient general interest, should be a *thorough* guide to the somewhat narrow range of remedies available in dental surgery.

The last edition of Mr. Stocken's book, published in 1882, while valuable in many ways, could scarcely be recommended to the present generation of students as "up to date"; it was therefore with some curiosity that we took up the new edition edited by Messrs. Leslie Stocken and Butcher, and sat down

to peruse the handy and well-printed little volume which might introduce us to the gradual revolution of dental pharmacology and therapeutics which has steadily asserted itself.

Let us at once state honestly, if candidly, that the perusal is disappointing. The general arrangement of the book is to be commended, and the plan of inserting a therapeutic index with suitable prescriptions is one which will be appreciated by the student; but when we come to analyse the contents a little closely the defects become woefully apparent. In trying to discriminate between the drugs which are, and those which are not, of interest to the dentist, a little latitude must be permitted, but surely those in common use might have been safely included. We look in vain for such old friends as cod-liver oil, zinc oxide, the members of the naphthol series (among the most useful of antiseptics), rectified spirit, gallic acid, tragacanth, cotton wool, and a host of others; while such humble acquaintances as turpentine, sulphur, stearine, and French chalk are entirely omitted. And too often important drugs are barely mentioned, *e.g.*, all the preparations of mercury are given under one heading, "Hydrargyri perchloridum;" whereas some preparations, of which it is absolutely necessary that the composition should be known, are completely ignored. The liniment of iodine is once casually mentioned, but the authors are obviously unacquainted with the merits of the liniment of aconite.

With regard to the therapeutic index we are bound to point out several deficiencies and inaccuracies. In the enumeration of the various drugs useful in particular cases, surely it would have been wiser had there been some directions as to *how* the various agents were to be used, instead of jumbling the whole lot together. As at present arranged, the hints given might, in the hands of a speculative but guileless student, prove somewhat disastrous. As an example of this, on p. 131 chloride of zinc and phenacetin are given, amongst other drugs, as remedies for "pain after extraction"; but if the former were administered *internally*, while the latter was applied *locally*, it is only fair to assume that a patient so treated might with justice inveigh against the value of dental literature. We venture to think, also, that the lists of remedies are somewhat lavish, and feel rather curious to know how iodoform can be classified—for dental

purposes—as a *local anæsthetic*; how eucalyptus oil is used in *stomatitis*; and how long it would take to devitalise a pulp with carbolic acid. The formulæ for mouth washes and tooth powders would have been more useful, from a student's point of view, had the quantities prescribed been more uniform, for then the value of the various ingredients in proportion to the whole could be more easily grasped; besides which, if one were to prescribe two ounces of tooth-powder for a patient one day, and on another occasion—for the same patient—order twelve ounces, the proceeding might be viewed with some amount of mistrust as to the prescriber's powers of discrimination. The prescriptions for various purposes are often somewhat confusing, the directions for use being sometimes in Latin, sometimes in English, and often absent altogether; an example of the last is found in the second prescription on p. 129, which, if used without dilution, would scarcely be pronounced a pleasant mouth-wash. We cannot subscribe to the therapeutic value of some of the drugs recommended, and would mention in this sense the drugs given as useful for obtunding sensitive dentine. We should certainly have omitted more than half as being absolutely useless, while placing hot air (altogether omitted) in a prominent position.

It is a pity that the proofs were not more carefully revised. The editors state in their preface that their *manuscript* was perused by an outside authority; and we venture to suggest that the book might have been purged of a host of blemishes had the same course been adopted with regard to the matter when printed. In several of the formulæ, for instance, several errors have crept in which are scarcely excusable. Drops and minims are indiscriminately used: the genitive case of “pulvis” is not always a fixed quantity; the genitive of “sodium” is written “sodiæ” (*sic*), while “borax” (p. 127) is evidently undeclinable, like the perverse otto of rose. Even the “typical example” of prescribing on p. 147 is scarcely orthodox in its spelling, while the formula at the top of p. 134, where it is complacently stated that twenty grains of chlorate of potash may be given to a child *three or more times a day*, must surely be a mistake, which in the case of a more potent drug might land the prescriber into a warm corner of a coroner's court. The editors might also, in a future edition, be a little more merciful to the dispenser, who cannot, try

as he will, dissolve two ounces of alum in ten drachms of water, as directed on p. 128.

We trust that errors of the nature of those we have quoted may be thoroughly expunged in a subsequent edition, as we feel sure that a book of this kind, if thoroughly reliable, would supply a want which is keenly felt—especially amongst students and junior practitioners.

THE DENTAL SURGEON'S DAILY DIARY AND APPOINTMENT BOOK. Post 4to, 224 pp. London: John Bale & Sons, Oxford House, Great Titchfield Street, W.; Claudius Ash & Sons, Broad Street, Golden Square, W.

ALTHOUGH this book has only been before the profession two years, it may be safely said to have thoroughly established itself as the most convenient form of diary the dental surgeon at present possesses. In the present issue we notice one or two agreeable alterations, the principal of which is the increase in size from octavo to quarto. Only the hours are printed and plenty of room is left for intermediate appointments. The list of prescriptions referred to in our last year's notice, is, we are pleased to find, omitted. A useful addition is a calendar for the following year, a point so desirable to all diaries, but by no means always found. In addition to the list of the members of the British Dental Association there is a large amount of material of special dental interest. We can with every confidence recommend this appointment book to the notice of our readers.

OBITUARY.

James E. Garretson.

By the death of Dr. Garretson, the profession in America has lost one of its brightest lights. Born in Wilmington, Delaware, October 18, 1828, Dr. Garretson commenced the study of dentistry with Dr. Thacher, of Wilmington, in 1850, and received his degree on February 29, 1856. He began the study of medicine at the University of Pennsylvania, graduating from that institution in 1859. At the organization of the Philadelphia Dental College in 1862, Dr. Garretson

became a member of the faculty as professor of pathology and therapeutics, but before delivering his course of lectures he resigned to accept the position made vacant by resignation of the late Professor D. Hayes Agnew in the Philadelphia School of Anatomy, in which school Dr. Garretson had been a demonstrator for five years. He continued in charge of the school until 1864, when he gave up that position and entered the Philadelphia Dental College as professor of anatomy and surgery. In 1869 he was appointed oral surgeon to the hospital of the University of Pennsylvania. In 1880 he became dean of the Philadelphia Dental College, which position he faithfully and acceptably filled until his death. He was the author of the "System of Oral Surgery," a book which has passed through six editions, the first appearing in 1869 and the last in 1895. The cause of his death was stated to be enteritis; many of his friends, however, believe that his death was hastened, if not induced, by mental anxiety caused by the difficulties resulting in the recent separation between the Philadelphia Dental College and the Medico-Chirurgical College. His death was preceded by profound nervous exhaustion, which increased to the end.

MISCELLANEA.

WE are officially informed that Mr. Hutchinson's term of office as President of the Representative Board expires by efflux of time in April, 1896, and that he will not seek re-election.

THE PRESERVATION OF CHLOROFORM.—A means of preserving chloroform for an indefinite time by saturating it with sulphur has, according to the *Pharmaceutical Journal*, been recently discovered. Chemically pure chloroform is taken, and the sulphur is prepared from ordinary sublimed sulphur by leaving it in contact with four times its weight of pure caustic ammonia during twenty-four hours. It is then washed with distilled water until neutral to litmus, and placed in a stove regulated to a temperature of 40° C., where it remains for four days, after which it is further dried over sulphuric acid for fifteen days. Purified chloroform exposed

to direct sunlight gave a precipitate with argentic nitrate solution after about forty-eight hours, but underwent no change under similar conditions if previously saturated with sulphur, except that there was a deposit of insoluble sulphur. Specimens thus treated have been exposed to sunlight for four months without any alteration that could be detected by the usual reagents, and were found to cause perfectly normal anæsthesia in men and the lower animals, without accident. In diffused light the addition of one-thousandth part its weight of sulphur preserved chloroform indefinitely in the presence of a great excess of oxygen. No explanation of the phenomenon is offered, but it is intended to perform similar experiments with selenium and tellurium in place of sulphur.

THE DANGERS OF COCAINE.—J. H. Marsh, writing to the *British Medical Journal* says: I have recently on three separate occasions had these dangers brought forcibly under my notice whilst using cocaine as a local anæsthetic preparatory to dilating strictures of the urethra with Lister's sounds.

"Twenty minims of a 10 per cent. solution of hydrochlorate of cocaine, freshly prepared and free from turbidity, were injected with a small glass syringe down the urethra, care being taken not to injure the mucous membrane. In all three cases within five minutes of the application alarming symptoms of collapse manifested themselves. The patients first complained of dimness of sight, became intensely pale, the pupils dilated, the forehead was covered with cold clammy perspiration, the respiration was gasping, and the pulse quickened. Twenty minims of ether were injected hypodermically, hot bottles were applied, and as soon as the patients could swallow, diffusible stimulants were freely administered. In two of the cases nitrite of amyl in 3 minim capsules was used in addition, and recovery in consequence was much more speedy."

BOROLYPTOL.—In a communication to *Items of Interest*, Dr. Wiber states that this comparatively new compound is an efficient germicide, deodorant and antiseptic, due largely to the formaldehyde and acetoboro-glyceride in its composition. For the former substance it is claimed that it is the most

powerful germicide known, possessing distinct inhibitory action on all microbic life, moulds and fungi, even in a solution of the strength of $\frac{1}{100000}$. The zymodical action of acetic acid has long been recognised; it, with boro-glyceride, imparts to borolyptol additional germicidal power. The remaining constituents are: Pinus pumilio, eucalyptus, myrrh, storax, and benzoin, combined to form a non-irritating, non-toxic, unchangeable antiseptic and germicidal medicament. In such conditions as stomatitis, inflammation of the mucous membrane, lacerations of gum from extraction, mercurial impressions, gingivitis, alveolar abscess, antral disturbance, &c., the result of its employment is quickly observed. As a mouthwash it is agreeable and efficacious.

TRAUMATICIN.—Traumaticin, as stated in the *Brit. Journ. Dent. Science*, is a saturated solution of gutta-percha in chloroform, and is most advantageously prepared as follows:—The lightest-coloured gutta-percha procurable is cut into small pieces and macerated with 12 or 15 times its weight of pure chloroform for twenty-four hours, with frequent agitation. The mixture is then transferred to a retort, and about one-third of the chloroform distilled off over a water bath. The traumaticin thus obtained is a thick homogeneous liquid, to which the requisite medicament may be added. For ichthyol traumaticin 4 parts of ichthyol are added to every 10 parts—similar proportions are used for salol, lysol, and phenol. Corrosive sublimate is added in the proportion of 1 part of sublimate for 100 parts of simple traumaticin. If the simple traumaticin should be coloured, and a colourless medicament is to be added, it may be decolourised by means of animal charcoal. It is best applied with a brush of hog's bristles, and forms a thin impermeable, pliable pellicle when the chloroform dries off. It gives rise to no discomfort, except a sense of burning when first applied, due to the chloroform. Traumaticin of ichthyol is of special service in the case of erysipelas.

ST. BARTHOLOMEW'S HOSPITAL.—In the surgical section of the statistical tables of St. Bartholomew's Hospital for 1894, the following cases of interest to dental surgeons are mentioned as having been treated in the wards during the year:—

Empyema of the Antrum.—Six cases (severe), one of which ended fatally, viz., a boy aged 11 admitted with empyema of the antrum and cellulitis of the orbit. He died ten days later with meningitis, thrombosis of cavernous sinuses, and other manifestations of pyæmia. At the *post mortem* much of the lower jaw was found to be bare, and there was foul sloughing about the pterygoid fossa.

Necrosis of Jaws.—Thirteen cases (severe), two of which ended fatally, viz., one, an ostler, aged 20, admitted with necrosis of the lower jaw and pyæmia, died in three days with suppurative thrombosis of the cavernous sinuses; abscesses in the lungs. The other, a boy aged 15, with tuberculous disease of both upper and lower jaws, and lardaceous disease, died with symptoms of meningitis.

Epithelioma.—Upper jaw, 6 cases; lower, 5 cases; lip, 9 cases; tongue, 27 cases; cheek, 7 cases; floor of mouth, 4 cases; palate, 4 cases. N.B.—All except 3 of these patients were over 40 years of age, and also, with the exception of 4 cases, all were men.

Sarcoma of Jaw.—Three cases all under 30 years of age.

Cancrum Oris.—Two cases under 5 years, one death.

LANTERN SLIDES FROM PROCESS BLOCKS.—A method of preparing lantern slides from process blocks used for book illustrations, is referred to in a recent issue of the *Pharmaceutical Journal*. The block is inked by a simple hand roller, the ink being a fine one tempered to the proper consistency with Calcutta boiled oil and japan drier, and then placed in a mount face upwards on the table, a piece of plain glass being set at a proper distance and on a level with it. A composition roller, made rather hard, is then run forward on two guides. As it passes over the block it takes the impression. On reaching the glass, after one complete revolution, it transfers the ink directly to it, the result being a print on the glass in the same way as on paper, but of superior quality.

ABNORMALITIES OF THE TEETH IN ACQUIRED SYPHILIS.—Although it appears theoretically possible that the well-known abnormality of the teeth so often found in subjects of congenital syphilis may occur, or rather be produced if syphilis is acquired, shortly after birth, so far clinical evidence has not

been adduced in support of the view. An interesting case bearing upon the point has, however, been recently reported by Dr. Welander, of Stockholm (*Nord. Med. Arkiv*, xxvii. 3). The patient was a lad, aged 13, born of parents without the slightest trace of syphilis, and had acquired the disease, when three or four months old, from his nurse. At the time when the patient was examined by the author, he suffered from interstitial keratitis and periostitis of the left tibia. In addition he presented the following changes in the teeth: the upper middle incisors were excavated in the shape of a half-moon at the edge; they were small and short, but the crown was normal. The upper lateral incisors presented no erosion, but were small, and their implantation was bad. Along the free edge and on the crown of the four lower incisors, there were numerous characteristic erosions. Lastly, the four canine teeth were marked at the end by a cup-like excavation, at the centre of which was a point of dentine. The other teeth were normal.

TO CLEAN AND POLISH ALUMINIUM.—According to the *Busy Dentist*, sheets of aluminium can be rendered beautifully white by dipping them first into a strong solution of caustic potash and afterwards into benzine, the latter removing all dirt and grease. When thus cleansed, they are plunged into a bath of 2 parts of nitric acid to 1 of water, next into strong nitric acid alone, and finally into a mixture of equal parts of vinegar and water. They are then carefully washed in pure water, and thoroughly dried in hot sawdust. A very brilliant lustre may be imparted to objects of aluminium, by immersing them in an emulsion produced by shaking together equal parts of olive oil and rum and then thoroughly rubbing the surface.

FERROPYRIN-KNOLL.—This compound, a sample of which we received from the Dental Manufacturing Company, is claimed to be a most reliable styptic. The advantages claimed for ferropyrin are that it acts quickly, does not stain the teeth, and has the properties of producing local analgesia, and does not leave any disagreeable taste in the mouth. Although we have not had the opportunity of testing ferropyrin in a case of alveolar hæmorrhage following tooth

extraction, we have found it reliable in the treatment of bleeding from the gums from other causes.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—John Stanton (Dublin), having passed the necessary examination, has been admitted a Licentiate in Dental Surgery of the College. The next examination is fixed to take place on Monday, February 10, 1896.

EDINBURGH DENTAL STUDENTS' SOCIETY.—The Annual Invitation Smoking Concert of the above Society was held in the Imperial Hotel, Edinburgh, on Friday evening, November 8. Mr. F. Page, L.D.S., occupied the chair.

There were present about 150 gentlemen, including Mr. W. Bowman MacLeod L.D.S., the Dean of the Dental Hospital, and a large number of the staff. An exceedingly pleasant evening was spent, with music, both vocal and instrumental, and recitations. The following gentlemen contributed to the evening's entertainment: J. W. Home, J. R. Nash, J. Morris Stewart, J. Bell, C. A. Lightfoot, R. W. Markham, C. L. Routledge, A. Maclean (students), and Messrs. Greenwood, Watt, Stewart, W. G. Stephenson, A.R.S.A., Parker Evans, Bosanquet, and Craig (friends).

CORRESPONDENCE.

We do not hold ourselves responsible for the views expressed by our correspondents.

Dental Progress.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

DEAR SIR,—I find in the annual report of the Dental School, Edinburgh, in the Journal issued in August, a statement recorded of very great interest, that over 13,000 cases had been treated, and more than one half of the operations were for the preservation of the teeth, showing conclusively, as the Dean said, that the School was having a vast educative influence among the poorer classes in regard to the value of their teeth and the necessity of preserving them.

I think the fact of this statement is the greatest mark of advance recorded in scientific treatment for the preservation of teeth which has been made known from the hospitals, and is well worthy of special consideration for the interest of the public. Perhaps this is a question

which is not in general accord with the popular practice at the present age. But there is in it a means of education which holds a scientific principle which is sure of progress and success in the future.

It may be said that science is slow in its progress in comparison to the wide practice of extraction. The reason is obvious: Science has not had a fair share of the very limited education which has been thrust upon the surgical part of dentistry. The surgical machine has been set in motion, and supported by almost every invention and every agency. In Mr. Humphrey's most excellent paper on science and surgery, a marked distinction is shown, and a gradual advance has been gained. In Mr. Storey's paper science is in the front of his ideal for the future. These are shoulders to the wheel, but the unity of the hospitals will be a great power for progress in scientific education. The hospital in Leicester Square has made great advances, and are anxious for additional accommodation to accomplish further progress. The Victoria Hospital is making a decided advance in the conservative part of instruction in the preliminary demonstrations for students.

Many years ago, Mr. J. S. Turner said, in a speech at Dublin, the primary object of the British Dental Association was to educate the profession, the medical profession and the public. This great and important statement has been resting quietly in the corner, nothing has yet transpired to breathe upon the dry bones. We have good and able members in the profession who are not waiting to be inspired, but are anxious to assist in the effort to adopt means to carry out a broad and effectual method of education, and believe it to be within the reach of the British Dental Association.

I am, yours faithfully,
SIDNEY WORMALD.

Stockport.

Some Medical Views of the Teeth.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—The enclosed cutting is from "Science and Nature Notes," in the columns of the *Yorkshire Weekly Post*. One might be forgiven for thinking that it was written sixty or eighty years ago, and not in 1895. And these, sir, are the popular medical teachers of what Thackeray used to call "that great, big, stupid, British Public."

Has no one got a primer to send to the writer, to show him that tartar is *not* a "boon and a blessing to men," but is actually more tooth destroying than tooth saving, and that it occasionally loosens and destroys the teeth? Also that charcoal, and even soot—elegant as they may seem to be—can scarcely be recommended as the *best* of dentifrices, the former being too gritty, and the latter only to be

recommended to Scottish maidens who are engaged to chimney-sweeps, on the score of economy, Horatio!

But the opening lines of this paragraph—which evidently refer to the trial of the barber in the Strand for extortion, with menaces, (after scaling the teeth of his victims)—are sufficiently vague and misleading to warn the reader to look out for squalls, for it is called “a trial of quack doctors or dentists in London.”

In one thing the writer is to be applauded. He recommends people to go to a qualified man, if they must have their teeth scaled; but as he evidently has his own views as to the value of that operation, I hope, sir, that you will give his brief “Note” a little corner in your valuable Journal.

I am, sir, yours faithfully,

Nov. 8, 1895.

L.D.S.ENG.

The following is the paragraph referred to:—

“A recent trial of quack doctors or dentists in London put it into my head to once more write a short paragraph on the teeth. I may seem to repeat what I have said before, but a good story can hardly be told too often. As to scaling the teeth, then, if it has to be done at all, though a trifling operation should be performed by a qualified man. There is just a doubt, however, whether it does not do more harm than good. The deposition of tartar on the teeth does not necessarily point to rapid decay. In fact, it may sometimes guard the teeth against decay. Nevertheless, tartar would never accumulate were the teeth and gums properly cared for. When the teeth begin to get loose and fall out it points to something radically wrong in the constitution, and an entire change in diet, or reform at all events, should be gone in for. Tonics do little good, except those that whet the appetite, such as quassia water, with diluted nitro-hydrochloric acid, taken immediately before meals. The morning tub, taken regularly, and plenty of recreative outdoor exercise, tend greatly to reinvigorate the system. As to the teeth, charcoal makes the best of all tooth powders. Talking jocularly, but truthfully, I knew a servant lassie in Scotland once who had teeth like pearls and a complexion that a Duchess would have envied. And how do you think she cleaned them? Why, with soot. She just put her hand up the lum (chimney) and blackened her dainty fingers, then set to work. This is a common practice in the ‘Land of the Leal.’ But there is no good cleaning one’s teeth only once a day. It should be done after every meal. I believe one half the cases of dyspepsia in this country are caused by bad or foul teeth, so they certainly should be taken good care of.”—*Yorkshire Weekly Post*.

Quack Dental Remedies.

TO THE EDITOR OF THE “JOURNAL OF THE BRITISH DENTAL ASSOCIATION.”

DEAR SIR,—Happening to glance inside a specimen copy of a new series of penny novelettes, I found, among other “useful” household hints the following:—

"DENTIST'S NERVE PASTE:—Arsenic one part, rose-pink two parts. To destroy the nerve, apply this preparation on a wad of cotton, previously moistened with creasote, to the cavity of the tooth. Let it remain four hours, then wash out thoroughly with water."

Is it not time that something was done to prevent unqualified persons playing with such edged-tools as the above? As will be seen, there is no indication that the above is anything different in character to the "Enamel for stopping decayed teeth, &c.," and such like harmless nostrums, and as nothing is said as to the *quantity* to be employed, a *fatal* accident is not inconceivable.

120, Gower Street, W.C.,
Nov. 22, 1895.

Yours faithfully,
HERBERT J. TORPEY.

Lady Members.

TO THE EDITOR OF THE "JOURNAL OF THE BRITISH DENTAL ASSOCIATION."

SIR,—I should not have troubled to reply to the communication of Mr. Fissure Bur in the November issue but for his concluding words, "If lady members be desirable the position can be arrived at in an orderly manner, and not by a rush."

Under Bye-law 2, Miss Lilian Murray, L.D.S. Edin., was elected a member of the British Dental Association by the Council of the Scottish Branch, at a meeting held on Tuesday, August 20, in Edinburgh. By an oversight the application form was not in the hands of the Hon. Secretary of the Association at the Representative Board meeting held on August 29, but this election by the Scottish Branch Council was mentioned by its President, and some little discussion took place on it. The paper was sent to the Hon. Secretary a few days later.

At the Board meeting held on November 2, the Chairman intimated certain steps which the Business Committee had taken in reference to this election by the Council of the Scottish Branch. In other words, the Business Committee had had practically *two months* in which to digest the perfectly orderly action of the Scottish Branch Council. To use Mr. Fissure Bur's euphonious phrase, there has been no "rushing" of this matter; everything has been done decently and in order.

I do not find Mr. Fissure Bur's name on the Dentists' Register for 1895, and consequently he is not a member of the British Dental Association. He must therefore have obtained his information second hand, and like most second-hand information, it turns out to be incorrect.

Yours obediently,
REES PRICE.

BOOKS RECEIVED.

DENTAL MECHANICS: Part II., THE DENTAL LABORATORY, by Harry Rose. *London*: J. P. Segg & Co., 289 and 291, Regent Street, W. (All rights reserved.)

MODERN MICROSCOPY, a Handbook for Beginners, by M. I. Cross and Martin J. Cole. Second Edition. *London*: Baillière, Tindall & Cox, 20 and 21, King William Street, Strand, 1895. (All rights reserved.)

THE DENTAL SURGEON'S DAILY DIARY AND APPOINTMENT BOOK. *London*: John Bale & Sons, Oxford House, Great Titchfield Street, W.; Claudius Ash & Sons, Broad Street, Golden Square, W.

Guy's Hospital Gazette, The Pharmaceutical Journal, The Chemist and Druggist, The Medical Press and Circular, The Ohio Dental Journal, The Students' Journal of the Liverpool Dental Hospital, The Dominion Dental Journal, The Dublin Medical Journal, The Birmingham Medical Review, L'Odontologie et la Revue Internationale d'Odontologie, The British Journal of Dental Science, Sunday World (Dublin), Revue Internationale de Medicine et de Chirurgie Pratiques, Items of Interest, Medical Reprints, The Dental Record, The Dental Cosmos.

Letters and other Communications received from:—

Percy T. Naden; F. Mellersh; F. Harrison; Thos. Walkinshaw; The Registrar of the Royal College of Surgeons in Ireland; J. H. Edwards; Herbert B. Ezard; Geo. W. Watson; Professor Hunter; J. D. Whittles; Rees Price.

APPOINTMENTS.

W. FRANCIS MELLERSH, L.D.S.Eng., to be Hon. Dental Surgeon to the Thames Ditton Cottage Hospital.

NOTE.—ANONYMOUS letters directed to the Secretary of the Association cannot receive attention.

P.O. Orders must be accompanied by Letters of Advice.

Communications intended for the Editor should be addressed to him at 11, Queen Anne Street, Cavendish Square, W.

Subscriptions to the Treasurer, 40, Leicester Square.

Subscriptions to the Benevolent Fund to the Treasurer, A. J. WOODHOUSE, Esq., 1, Hanover Square, W.

All Contributions intended for publication in the Journal must be written on one side of the paper only. The latest date for receiving contributions for the current number is the 5th of the month.

Educational Supplement.

EDUCATIONAL SUPPLEMENT.

THE steps necessary for anyone wishing to qualify as a dental surgeon may be divided into :

- (a) The Preliminary Examination in General Education.
- (b) Professional Education (must extend over four years subsequent to Registration).
- (c) Examination.

(a) The Preliminary Examination.

The General Medical Council require, previous to registration, that the student shall have passed an examination embracing the following subjects :—

- “(a) English Language, including Grammar and Composition.
- “(b) Latin, including Grammar, Translation from specified authors, and Translation of easy passages not taken from such authors.
- “(c) Mathematics, comprising (a) Arithmetic ; (b) Algebra, as far as Simple Equations, inclusive ; (c) Geometry, the subject matter of Euclid, Books I., II., and III., with easy deductions.
- “(d) One of the following optional subjects :—
 - “(α) Greek, (β) French, (γ) German, (δ) Italian, (ε) any other Modern Language, (ζ) Logic.”

The General Medical Council do not accept any Certificate of pass in Preliminary Examination in General Education, unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been passed at the same time.

A list of examining bodies whose Examinations in General Education are recognised by the General Medical Council can be obtained from the Offices of the Council, 299, Oxford Street, W. Those most

to be recommended are :—The Matriculation of the University of London, the Oxford and Cambridge Local Examinations, and the Special Examination conducted by the College of Preceptors for Medical Students.

The matriculation, which is held in January and June, is on all grounds the best—it can be passed when a youth is sixteen or seventeen without much difficulty, and possesses these advantages :—It ensures the boy receiving a good education, it opens the doors to all the professions, and if at any time during his pupilage or hospital career the student should forsake dentistry for any other branch of the healing art, it is open to him to do so, without returning to school books and passing another preliminary examination.

(b) Professional Education.

The Professional Education consists of Instruction in the Principles of General Surgery and Medicine, as well as in Dentistry, Mechanical and Surgical. The curricula required by the different examining bodies are given on another page, and it will be seen that they only differ from one another in slight details.

This part of the education should commence by an apprenticeship to a registered dentist, in order that the mechanical side of his calling may be thoroughly mastered ; the different examining bodies require this to extend over three years. It is impossible to over-rate the mechanical training, and three years is not too long to spend in a workshop to learn and master the many minutiae of the mechanical art, without a thorough familiarity with which it is impossible to be a good dentist. Immediately the articles are signed the youth should register as a dental student at the offices of the General Medical Council, 299, Oxford Street, W.

In the case of those who commenced their professional education by apprenticeship to dentists entitled to be registered or by attendance upon professional lectures before July 22, 1878, production of a certificate of a preliminary examination is not necessary. Much trouble often arises from neglect to register. All that is necessary is to apply for a registration form and transmit it properly filled in with the pass certificate of the preliminary examination to the Council's offices.

At the expiration of the three years' apprenticeship the hospital career should commence by simultaneous entrance at a dental and general hospital. The candidate should now register as a medical student, not necessarily to take a medical or surgical qualification, but in order that he may be able to do so at some future time should he wish. The work which would be done at the general hospital for the dental qualification, and which is largely the same as that required for the general qualification, need not then be repeated, but the whole of the time so spent allowed to count as part of the medical curriculum.

The hospital years should be spent in real hard work in mastering every detail of the operative department. The student should seek advice from his teachers, and avail himself of every opportunity of learning from the large experience of the members of the hospital staff. At the general hospital let the time be spent mainly in the dissecting-room, the physiological laboratory, where he should devote himself largely to Dental Microscopy and the out-patient department, in which places the most practical part of the medical education is obtained. It is advisable that he should dissect a head and neck, thorax, and abdomen, whilst attending the dissecting-room. The out-patient room is not sufficiently often visited by the general student, and the attendance of the purely dental student is, very often, *nil*! Yet it is here that he must obtain the only knowledge in practical general surgery he will have the opportunity to learn.

(c) *The Examination.*

There are four examining bodies which grant diplomas in Dental Surgery. The tables on the following pages show the curriculum required by each and the details of the examination.

EDUCATIONAL CENTRES.

Instruction in dental surgery can be obtained now not only in London but also at many of the large provincial centres. The following are brief particulars of the various hospitals and schools.

LONDON.

The Dental Hospital of London and London School of Dental Surgery.

The Dental Hospital, founded in 1858, was opened for the reception of patients at 32, Soho Square, and in March, 1874, was removed to more commodious premises at Leicester Square, which it now occupies. The rapid growth of the school made enlargement of the premises a necessity, and, thanks to the munificence of Sir Edwin Saunders, another wing was added to the building in 1883, giving increased accommodation, and making the Hospital the largest for dental students. The most complete arrangements are provided for the education of students preparing for the L.D.S. diploma of the Royal College of Surgeons.

The hospital is open every afternoon except Saturday, in addition to

	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
1—PRELIMINARY NATION EXAMINATION	Compulsory on all who commenced their Professional Education after July 22nd, 1878. Must be registered as a Dental Student at the Office of the General Medical Council, 299, Oxford St., London, W. Twenty-one.	Compulsory on all who commence their Professional Education after August 1st, 1878. All Boards qualifying for Registration as a Dental Student are recognised. Must be duly registered. Twenty-one.	Compulsory on all, except those who have passed one equivalent examination.	Compulsory on all who commenced the Professional Education after August 1st, 1878.
2—AGE at which the Candidate may present himself	Four years subsequent to registration.	Four years subsequent to registration. * * For students commencing after October, 1890. (3.)	One Winter Course. (Six months.)	Must be duly registered. Twenty-one.
3—DURATION OF PROFESSIONAL EDUCATION	A Course of Lectures during not less than six months or one Winter Session. Twelve months.	Twelve months (Practical Anatomy). Six months.	Two Winter Courses (including Dissections and Demonstrations). One Course. (Six months.) One Course. (Three months.) One Course. (Six months.)	Four years. (Forty-five months.) One Winter Session.
4—COURSES OF LECTURES, &c., to be attended at a recognised School:—	One Course (Six months.) Three months' Course.	Ditto (held to embody Metallurgy). Three months.	One Summer or Winter Course (including Metallurgy). (Three months.)	Twelve months (Dissections). One six months' Course.
Anatomy	Instruction in, which must include Practical Chemistry and Physics. One Course.			Ditto.
Dissections and Practical Anatomy				Three months (includes Metallurgy).
Physiology				
Practical Physiology (separate from above)				
Chemistry				
Practical Chemistry				

	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
Materia Medica	Instructions in Chemistry, Practical Chemistry and Materia Medica need not be taken in the general hospital and may be taken before registration. * * Attendance at Class Examinations obligatory.	Three months.	One course. (Three months.)	Three months.
Metallurgy	One Course.	Included in Chemistry.	Included in Chemistry Lec- tures.	One Course.
Course of Lectures on Sur- gery	Six months, or one Winter Session.	One Course.	One course. (Six months.)	One Course.
One Course of Lectures on Medicine	Six months, or one Winter Session.	One Course.	One course. (Six months.)	One Course.
Practice of Surgery, and Clinical Lectures	Two Winter Sessions.	Twelve months (at a recog- nised Hospital). * Candidates who com- menced study before July 1st, 1895, will not require to take more than six months.	One year.	Not less than twelve months.
Dental Anatomy and Phy- siology, Human and Com- parative	Two Courses.	One Course.	One Course.	Twenty-four Lectures.
Dental Surgery & Pathology	Two Courses.	One Course.	Two Courses.	Twenty Lectures.
Dental Mechanics	Two Courses. * * Attendance at Class Examinations obligatory.	One Course.	Two Courses.	Twelve Lectures or Demonstrations.

	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
<p><i>Courses of Lectures—Contd.</i></p> <p>Practical Instruction in Mechanical Dentistry</p>	<p>Three years under the instruction of a competent Practitioner, or under the direction of the Superintendent of the Mechanical Department of a recognised Dental Hospital, where the arrangements for teaching Mechanical Dentistry are satisfactory to the Board of Examiners in Dental Surgery. In the cases of qualified Surgeons evidence of a period of not less than two instead of three years of such instruction will be sufficient.</p> <p>This instruction may be taken prior to the Date of Registration as a Dental Student.</p>	<p>Three years under a Registered Dental Practitioner, or in Mechanical Department of a recognised Dental Hospital whose arrangements are held to be satisfactory to the College (4).</p>	<p>Not less than three years under a Registered Dentist in acquiring a practical familiarity with the details of Mechanical Dentistry.</p>	<p>Three years under a Registered Practitioner, or in the Mechanical Department of a recognised Dental Hospital.</p> <p>Attendance at Hospital (6).</p>
<p>Practice of Dental Surgery in a recognised Dental Hospital, or in the Dental Department of a recognised General Hospital</p>	<p>Two years.</p>	<p>Two years.</p>	<p>Two years.</p>	<p>Two years (7).</p>
<p>5—Fee</p>	<p>£21 over and above stamp duty. For all Students registered before June 13th, 1895, £10 10s.</p>	<p>£4 4s. for First. £6 6s. for Second. (No stamp duty.)</p>	<p>£10 10s. for First, and £10 10s. for Final. Fees for re-examination £5 5s. each part.</p>	<p>£4 4s. for First. £6 6s. for Final.</p>

6—LEAST period during which unsuccessful Candidates are referred to their studies	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
	Six months, subject to the decision of the Board.	<p>Three months.</p> <p>* * No candidate admitted to this Examination who has been rejected by any other Licensing Board within three months.</p>	Three months.	<p>Six months.</p> <p>* * No candidate admitted to this examination who has been rejected by any other Licensing Board within six months.</p>
7—PARTICULARS OF EXAMINATION	<p>One Examination.</p> <p>(A) <i>First Day (Written).</i></p> <p>On Anatomy and Physiology; and Surgery and Pathology. (Two questions on each. Time two hours.)</p> <p>On Dental Anatomy and Physiology; and Dental Surgery and Pathology. (Three questions on each. Time three hours.)</p> <p>(B) <i>Second Day (Practical).</i></p> <p>(a) On the treatment of Dental Caries, and will be required to prepare and fill cavities with gold or plastic filling or other material, or to do any other operation in Dental Surgery.</p> <p>(Candidates must provide their own instruments.)</p>	<p><i>Written and Oral:</i> (3).</p> <p>1st Part—Anatomy, Physiology, Chemistry (with Metallurgy).</p> <p><i>Written, Practical and Oral.</i></p> <p>2nd Part—Surgery, Medicine, Therapeutics, and Special subjects of Dental Anatomy and Physiology, Dental Surgery, and Pathology, and Dental Mechanics. Registered Medical Practitioners are examined on special subjects only.</p> <p>Candidates are supplied with instruments.</p>	<p>Two examinations.</p> <p><i>Primary:</i></p> <p><i>First Day (Written).</i> 10 a.m. to 1 p.m. Five questions on Physics and five on Chemistry, including Metallurgy, three on each to be answered. 3 p.m. to 6 p.m. Five questions on Anatomy, and five on Physiology and Histology, three questions on each to be answered.</p> <p><i>Second Day (Written and Oral).</i> 10 a.m. to 11.30 a.m. (Written). Five questions on Surgery. Three to be answered. 4 p.m. (Oral). 15 minutes in each of the following subjects—Chemistry, Anatomy, and Surgery.</p>	<p><i>Written, Oral & Practical:</i></p> <p>1st part — Anatomy, Physiology, Chemistry, and Metallurgy.</p> <p>2nd Part — Surgery, Medicine, Materia Medica, and special Dental subjects.</p> <p>Practical Examination at a Dental Hospital. Candidates are to bring Excavators, Files, and Plugging Instruments.</p>

PARTICULARS OF EXAMINATION. — <i>continued.</i>	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
<p>(b) On the mechanical and surgical treatment of the various irregularities of Children's teeth.</p> <p>(c) In Mechanical Dentistry.</p> <p>(b) <i>Third Day (Oral).</i></p> <p>Ten minutes each on Anatomy, Surgery, Dental Anatomy, and on Dental Surgery.</p>	<p>There is a Practical Examination in Dental Hospital as well as Written and Oral Examination in Dental and General Surgery, Pathology and Mechanics at Surgeons' Hall.</p>	<p><i>Third Day (Practical).</i> Practical Examination in Chemistry and Histology at Royal College of Surgeons. Candidates are examined for at least half-an-hour in each subject.</p> <p><i>Final:</i></p> <p><i>First Day.</i> Practical Examination in Clinical Dental Surgery and Practical Operative Dentistry, and Mechanics. Candidates are required to provide their own Instruments and gold for filling.</p> <p><i>Second Day (Written).</i> 10 a.m. to 1 p.m. Five questions in Dental Surgery and five in Dental Mechanics, three to be answered. 4 p.m. Oral Examination of 15 minutes in each of the following subjects: Dental Surgery and Dental Mechanics.</p>	<p>Practical Clinical Examination and also Practical Examination in Mechanical Dentistry. Oral Examination in all the subjects.</p>	

8—DATE OF EXAMINATION.	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
9—MODIFIED CONDITIONS OF ADMISSION TO EXAMINATION. (2) (a) Conditions of eligibility.	May and November.	<p>I. <i>Primary</i> Examinations. Tuesday, April 28, 1896. Monday, July 2, 1896.</p> <p>II. <i>Final</i> Examinations. Begin on following Thursday. N.B.—Students who commenced their professional education by apprenticeship, before July 22, 1878, are exempted from the Preliminary Examination.</p>	<p>Examinations. February, May & November.</p> <p>Candidates must be registered Dental Practitioners in practice before 1878.</p>	<p>Wednesday, Oct. 9th, 1895. Wednesday, April 8th, 1896.</p> <p>The Second Examination takes place on the two days following these dates.</p>
(b) Certificates, &c., required.			<p>Certificates of moral and professional character, stating he has been five years in practice, and has not attracted business as a dentist by advertising or other unbecoming practices, signed by two gentlemen holding Irish Medical or Dental Diplomas, members of the B.D.A. or Odontological societies.</p>	

9—MODIFIED CONDITIONS OF ADMISSION TO EXAMI- NATIONS.— <i>continued</i> (2).	Royal College of Surgeons, England.	Royal College of Surgeons, Edinburgh.	Royal College of Surgeons, Ireland.	Faculty of Physicians and Surgeons, Glasgow.
<p>(c) Manner of Examination</p> <p>Fee... ..</p> <p>For further information apply to Secretary.</p>	<p>F. G. HALLETT, Esq., Ex- amination Hall, Victoria Embankment, London, W.C.</p>	<p>FRANCIS CADELL, Esq., M.B., F.R.C.S.E., Secre- tary and Treasurer, 22, Ainslie Place, Edinburgh, or to the Clerk of the Col- lege, James Robertson, Esq., Solicitor, 1, George Square, Edinburgh.</p>	<p>Name. Age. Address.</p> <p>Date of commencing prac- tice, and whether such practice has been carried on in conjunction with any other business, and if so with what business.</p> <p>Professional status.</p> <p>Particulars of Professional Education.</p> <p>£26 5s.</p> <p>G. F. FLAKE, J.P., Royal College of Sur- geons, Dublin.</p>	<p>(8)</p> <p>Various undertakings as to Professional con- duct, &c., have to be made by the Candidate.</p> <p>ALEX DUNCAN, Esq., Faculty of Physicians and Surgeons, Faculty Hall, 242, St. Vincent Street, Glasgow.</p>

- (1) Candidates who are Members of the College, or who have passed the Examination in Surgery of the Examining Board in England, or who shall produce evidence of having passed the Examination in Surgery for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Surgery for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in General Surgery and Pathology.
- (2) Candidates who have passed the Second Examination of the Examining Board in England, or who shall produce evidence of having passed the Examination in Anatomy and Physiology required for the Licence in Surgery of the Royal College of Surgeons of Edinburgh, the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or an Examination in Anatomy and Physiology required for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from re-examination in those subjects.
- (3) For curriculum required for Students who have commenced their studies *prior* to 1st October, 1890, see Prospectus of Regulations, page 5.
- (4) One year's *long fide* apprenticeship with a registered dental practitioner, after being registered as a dental student, may be counted as one of the four years of professional studies. The three years of instruction in mechanical dentistry, or any part of them, may be taken by the student either before or after his registration as a student; but no year of such mechanical instruction shall be counted as one of the four years of professional study unless taken after registration.
- (5) Candidates who have passed the First and Second Examinations of the Examining Board in England, or who shall produce evidence of having passed the First and Second Examinations of the Scottish Conjoint Board; the third Professional Examination of the Royal College of Surgeons in Ireland; the corresponding Examinations required for a Degree in Medicine or Surgery at a University in the United Kingdom, will be exempt from the First Dental Examination.
- (6) Attendance for two years at a recognised Dental Hospital, or the Dental Department of a recognised General Hospital, in which special provision is made for the proper training of Dental Students.
- (7) Practice of recognised General Surgical Hospital required for six months.
- (8) Candidates qualified in Medicine and Surgery are admitted to the Final Examination on producing evidence of attendance in the Special Dental Courses, including Two (instead of Three) Years' Practical Instruction in Mechanical Dentistry; and they are examined on the Special Dental Subjects only. Candidates who have passed the Examination in Anatomy, Physiology and Chemistry, before any recognised Medical Board, are exempt from the First Examination.

the morning, under the supervision of a special staff and house surgeons, this extension of the hours of work having been found necessary in order to afford the additional opportunities for practical work and teaching which the rapid growth of the institution demanded.

The officers for the day give practical teaching at the chair side, enabling the students to acquire experience in the treatment of the many minor difficulties of their profession.

Four demonstrators are appointed, whose duty it is to teach the students, and on their respective days to assist the new students in their work. During each session they hold classes and give instruction in Operative Dental Surgery.

A demonstration is given in each week by a member of the staff for second year's students. The whole of the staff demonstrate and give lectures on various modes of practice, and any form of work in which they are specially skilled.

The mechanical laboratory is under the care and superintendence of the lecturer on Dental Mechanics, and a skilled mechanic. Students are required to take models, manufacture and fit into the mouth dentures for those patients allotted to them by members of the staff, the actual manufacture being under the superintendence of the mechanical assistant, while the adapting to the mouth is supervised by members of the staff.

It is intended, in this manner, to supply a portion of the student's education heretofore unprovided for, and to more perfectly equip him for the exigencies of dental practice. It enables him to be in a better position to meet the requirements of the College of Surgeons of England with regard to Mechanical Dentistry, in which subject the Board of Examiners for the L.D.S. demand a practical examination from candidates for that diploma.

The medical tutor attends and helps the students in preparing for their examination for two months before each examination.

The Saunders Scholarship, value £20, is awarded each year.

Messrs. C. Ash & Sons give a prize of the value of five guineas each year. Prizes are awarded by the lecturers, and a special one is presented to the best operator for the year.

The eight house surgeoncies are valuable additions to the prizes, and are filled by students of the hospital holding the L.D.S.

Fee for two years' hospital practice required by the curriculum, including lectures, £50 in one payment on entry, or 50 guineas in two yearly instalments. The curriculum requires two years to be passed at a general hospital. The fee for this is about £55. *Both hospitals can be attended simultaneously.*

The Calendar may be obtained on application to the Dean, who attends at the hospital on Wednesday mornings from 10.30 till 12 o'clock throughout the year.

MORTON SMALE,
Dean.

The National Dental Hospital and College.

(Founded 1861.)

GREAT PORTLAND STREET.

This Hospital has only been recently erected, and the accommodation and fittings are in complete accord with the latest requirements for efficient teaching.

An Entrance Exhibition of the value of £15 is open for Competition at the commencement of each Summer and Winter Session, after an Examination in the following subjects :—

Physiology.—The Functions of Respiration, Circulation, and Digestion.

Osteology.—Bones of the Head.

Chemistry.—The Non-Metals and their Compounds.

Dental Mechanics.—Theoretical and Practical.

All New Students pass through a preliminary course under the care of a Demonstrator.

All the Members of the Staff, besides teaching at the Chair-side, give Special Demonstrations.

Six Prizes, in Medals, are open for competition among the Students of the College at the end of each Course of Lectures on the following subjects, viz :—Dental Anatomy, Dental Surgery, Dental Mechanics, Metallurgy, Operative Dental Surgery, and Dental Materia Medica.

Certificates of Honour will be awarded to those Students who show superior proficiency in any of the classes.

The Rymer Gold Medal for General Proficiency, value £5, will be awarded annually to the most distinguished Student of the year.

The Ash Prize, value £3 3s., is awarded annually for the best Thesis on a subject in Dental Surgery.

The Meetings of the Students' Society are held on the evening of the first Friday in each month from October to March, both inclusive, at 8 o'clock.

The Fee for Two Years' Hospital Practice, and for all the Lectures required by the Curriculum of the Royal College of Surgeons of England, is thirty guineas, until October 1, 1896, when it will be raised to forty.

A Calendar and all particulars can be obtained on application to
SIDNEY SPOKES, *Dean*.

Guy's Hospital Dental School.

This school is in connection with Guy's Hospital, and is the only Dental School in London where all the requirements for the L.D.S.Eng. can be obtained.

An Open Entrance Scholarship in Arts, of the value of £30, is

offered for competition annually in the month of September. All particulars relating to the examination may be obtained upon application to the Dean.

Three Prizes are awarded annually—First Year's Students' Prize, £10; Second Year's Students' Prize, £15; Second Year's Students' Prize (Operative Surgery), £10.

Instruction is given to students in making dentures, regulation plates, and mechanical appliances for the treatment of dental irregularities and oral deformities. Pupils for the Mechanical Apprenticeship are not accepted.

The Dental Tutor.—Before each examination for the diploma of L.D.S., Demonstrations are given and Classes are held by the Tutor.

Continuous Instruction is afforded by means of a separate morning and afternoon Staff of Dental Officers, who give Clinical Demonstrations.

The following appointments are allotted to Dental Students according to merit: Three Dental House-Surgeons, two Assistant Dental House-Surgeons, one Assistant Demonstrator of Dental Microscopy, six Demonstrators in the Conservation Room, two Curators of the Laboratory.

Fees.—The Fees for the two years' Hospital Practice required by the Royal College of Surgeons for the L.D.S., including Lectures, is £50. The Fee for instruction in general subjects in Guy's Hospital Medical School is £60, with a reduction of 12 guineas in the case of those Students who have obtained certificates of instruction in Chemistry, Practical Chemistry, and Materia Medica. No arrangements are made for short periods of Instruction or Special Courses of Lectures.

Further particulars, with prospectus, may be obtained from the Dean,

Dr. LAURISTON SHAW, Guy's Hospital, S.E.

GENERAL MEDICAL SCHOOLS.

Candidates should apply to the Dean of the Medical School at which they intend to enter, for a calendar. At the Middlesex and Charing Cross Schools, the times of Lectures are specially arranged to suit Dental Students.

CHARING CROSS HOSPITAL, W.C.

The Composition Fee for Dental Students is 54 guineas, or 60 guineas payable in two instalments of 30 guineas each. A reduction is made in the case of Students who produce Certificates on joining the School of previous attendance on Chemistry, Practical Chemistry, and Materia Medica, and an additional reduction is made to Dental Students not requiring Practical Physiology.

STANLEY BOYD, *Dean*.

KING'S COLLEGE, STRAND, W.C.

No special arrangements are made for Dental Students.

Prof. CURNOW, *Dean*.

LONDON HOSPITAL, MILE END, E.

Composite Fee for Dental Students.—Hospital Practice and Lectures, £42. This does not include the fee of £2 2s. for Practical Chemistry.

MUNRO SCOTT, *Warden*.

MIDDLESEX HOSPITAL, BERNERS STREET, W.

The Composition Fee for Dental Students is 54 guineas in one sum on entrance, or by instalments of 40 guineas on entrance and 20 guineas at the beginning of the second Winter Session. No deduction can be made from composition fees.

SIDNEY COUPLAND, M.D., *Dean*.

ST. BARTHOLOMEW'S HOSPITAL, SMITHFIELD, E.C.

Fee for General Subjects for Students of Dental Surgery :—First Winter, 31½ guineas ; First Summer, 31½ guineas ; or a single payment of 63 guineas.

T. W. SHORE, M.D., *Warden*.

ST. GEORGE'S HOSPITAL, GROSVENOR PLACE, S.W.

Fee for General Subjects required for the Diploma in Dental Surgery, including Practical Chemistry, £55 ; payable in two instalments :—First year, £30 ; second year, £25.

ISAMBARD OWEN, M.D., *Dean*.

ST. MARY'S HOSPITAL, PADDINGTON, W.

Entrance Fee to the General Hospital Practice and Lectures required for the examination in Dental Surgery at the Royal College of Surgeons, England, £55 ; payable in two instalments :—First year, £30 ; second year, £25.

GEORGE FIELD, *Dean*.

ST. THOMAS'S HOSPITAL, ALBERT EMBANKMENT, S.E.

The Fee for attendance on the General Subjects required of Students in Dental Surgery is, for the two years, £65 ; or by instalments, £55 for the first year, and £15 for the second year.

G..H. MAKINS, *Dean*.

UNIVERSITY COLLEGE, GOWER STREET, W.C.

The Fee for Subjects required at a General Hospital by the Dental curriculum is 65 guineas.

PROFESSOR A. E. BARKER, *Dean*.

WESTMINSTER HOSPITAL, BROAD SANCTUARY, S.W.

The Fees for the General Surgical Practice and Lectures required for the Dental Diploma of the Royal College of Surgeons may be paid in one of two ways, viz. :—1. In one payment on entrance, fifty guineas (£52 10s.). 2. In two payments of £30 and £26, to be made

respectively at the commencement of each academic year. These payments include the Library Fee, and entitle the Student to attendance on the Tutorial Classes.

A Scholarship, value £20, is offered annually for competition to Dental Students commencing in October. Particulars in Prospectus from—

WALTER G. SPENCER, M.S.Lond., *Dean*.

MANCHESTER.

Victoria Dental Hospital.

DEVONSHIRE STREET, ALL SAINTS.

Two Dental Surgeons are in attendance each time the hospital is open, and are assisted in the practical teaching by the Demonstrator and House Surgeons.

PRELIMINARY INSTRUCTION.

During their first four months at the Hospital new students are taken by the Demonstrator through a very complete course of practical instruction in all branches of operative dentistry. This course includes the actual preparation and filling of cavities out of and in the mouth, the treatment of the different pathological conditions of the dental pulp, the treatment and filling of root canals, and the different methods of crowning.

A SPECIAL COURSE OF DEMONSTRATIONS

is given to more advanced students by the Lecturer on Operative Dentistry, and other demonstrations are given periodically by the dental staff.

Prizes.—The Fletcher prizes are awarded annually—in July. They consist of a first prize, value £8, for second year's men, and a second prize, value £2, for the first year's men. The Matheson Operating Prize, value £3 3s. A prize, value £2 2s., is given by Messrs. Ash & Sons for the best essay on some subject in general surgery in connection with the teeth. This prize is awarded in July. Two prizes, value one guinea and two guineas, are offered respectively to first and second years' men, for proficiency in the extraction of teeth. A prize, value two guineas, for the best Regulating Case treated during the year.

Fees.—The fee for the two years' Dental Hospital practice required by the College of Surgeons of England is £12 12s., which must be paid in advance.

A prospectus containing full information may be had on application to—

GEO. G. CAMPION, *Dean*.

The dental lectures and general instruction are obtained at the Owens College, in conjunction with the Manchester Royal Infirmary.

The dental department forms an integral part of the department of medicine, and affords the fullest opportunities for study to students preparing for any of the dental examinations.

In addition to the ordinary dental lectures required by the licensing bodies, a course on Operative Dentistry is given during the summer session, and these are supplemented by a series of practical demonstrations given by the lecturer at the Victoria Dental Hospital.

There is also a special course of demonstrations on Dental Histology and Pathology, in which students are enabled to mount for themselves microscopic specimens illustrating these subjects.

Prizes or medals and certificates are awarded in all the classes on the results of the several examinations.

The fee for the two years' lectures, &c., required by the Dental Curriculum of the Royal College of Surgeons of England is £50, payable in two sums of £25 each at the beginning of the first and second years of studentship.

The two years' general hospital practice is taken at the Manchester Royal Infirmary, fee £10 10s.

Prospectuses will be forwarded on application.

H. W. HOLDER, M.A., *Registrar.*

LIVERPOOL.

Liverpool Dental Hospital and School of Dental Surgery.

During the past year the premises have been entirely renovated, remodelled, and enlarged, with a view to increasing the comfort and facility of working. As it now stands, this school offers advantages to students which are not excelled anywhere.

The ground floor of the building contains the following : Extraction Room, with all needful appliances ; Anæsthetic Room, specially reserved, with every convenience ; and large Waiting Room for Patients.

The first floor has a large Board Room, and a very comfortable Students' Room, set apart exclusively for the use of the students.

The whole top floor of the building has been thrown into one fine, airy, and well-ventilated Operating Room. This room will accommodate upwards of thirty operating chairs, which are of the "Morrison Pattern," and each of which has a special electric light (canting pendant) suspended before it.

In the basement a very convenient Workroom has been fitted up, containing the necessary requirements, and there are also commodious lavatories for students.

The times of the Lectures at the University College have been re-arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital Practice.

Fees for two years' Hospital practice, £12 12s. ; Perpetual, £15 15s.

Additional information can be obtained at any time on application to
R. EDWARDS, *Dean*.

The various dental lectures and instruction in general subjects are obtained at University College, Liverpool, the composition fee for all lectures being £50 in one payment on entrance, or in two equal instalments (one half on entrance and the remainder within twelve months), the fee for General Hospital Practice being £10 10s.

Further particulars can be obtained of

Professor PATERSON, *Dean*.

BIRMINGHAM.

Birmingham Dental Hospital,

71, NEWHALL STREET.

This hospital provides all the necessary Practice for the L.D.S. England. The Demonstrators attend four days a week to instruct the students. Demonstrations are given weekly to the senior students by the Honorary Staff.

The New Conservancy Room is fitted with the latest appliances, is now in use, and means are provided for the making of Crowns and Bridge-work.

The post of Assistant to the House Surgeon is awarded every six months to a senior student. Certificates of Merit are awarded annually to the best operators. The "C. Green" Memorial Silver Medal is awarded to the best operator under Anæsthetics. Messrs. C. Ash and Sons give a prize annually for the best essay upon a given subject. A prize is awarded annually for the best series of Regulation Cases.

Fees for two years' Hospital practice, £12 12s.

A Prospectus containing full information will be forwarded on application to

FRED. W. RICHARDS, L.D.S.Eng.,

Honorary Secretary to the Surgical Committee.

The various special Dental Lectures and also the entire course of Instruction in General Subjects is provided at Mason College in conjunction with the General, Queen's and Dental Hospitals.

The College possesses a well-equipped Dental Museum and Laboratory. An Entrance Scholarship of £15, Medals, and Certificates in the Classes are offered annually. There are special courses on Surgical

Diseases of the Mouth, and on Diseases of the Mouth and Stomach in relation to Dentistry, and on Practical Dental Microscopy. Fees—General Hospital, £12 12s. ; Mason College (Lectures), £50. Prospectuses and further information can be obtained from

GEO. H. MORLEY,
Registrar of the College.

Devon and Exeter Dental Hospital.

Pupils of any member of the staff or other registered practitioner (being a Life or Annual Governor) are permitted to attend the practice of the Hospital, subject to the approval of the Medical Sub-committee, on payment of £5 5s. annually to the funds of the Institution. Attendance on the practice of this Hospital is recognised by the Royal College of Surgeons of England as qualifying for their Dental Diploma. Full particulars can be obtained of

HENRY YEO,
Hon. Secretary.

EDINBURGH.

Edinburgh Dental Hospital and School.

31, CHAMBERS STREET, EDINBURGH.

The new premises, 31, Chambers Street, present facilities for a complete Dental training.

Besides the ordinary practice and instruction, the following special classes have been instituted in Gold Filling, Dental Materia Medica and Therapeutics, Dental Metallurgy.

There are rooms for extracting, with and without anæsthetics, and every facility is given for the thorough acquisition of a knowledge of anæsthetics and their application.

Special facilities are also afforded in the mechanical department under the superintendence of the Lecturer in Dental Mechanics and his demonstrators ; a large and fully equipped workroom under the charge and direction of a competent mechanic having been set aside for the construction of dental appliances, and general Technical Training.

Fee for two years' Hospital Practice, £15 15s. ; Lectures, as required by the Curriculum, £9 15s. Special Lectures free.

There is a Students' Society in connection with the School.

The prospectus for Session can be obtained on application to the Dean, at 31, Chambers Street.

One or two indentured Pupils can be attached to the School, who

will receive both Mechanical and Operative instruction within the building. Period of Pupilage, four years. This term includes period of medical study.

Instruction in general subjects is obtained at "The Medical School of the Royal Colleges of Surgeons and Physicians of Edinburgh."

The total fees for the necessary Hospital practice and Lectures amount to £80.

W. BOWMAN MACLEOD, *Dean*.

GLASGOW.

Glasgow Dental Hospital.

4, CHATHAM PLACE, STIRLING ROAD.

Secretary and Treasurer.—D. M. Alexander, 97, West Regent Street, Glasgow.

Fees for attendance on the lectures and hospital practice, £23 2s. on entering.

The Medical Schools in connection with the Dental Hospital are the University, Andersonian, and St. Mungo.

The fee for the two latter is £2 2s. for each subject (except Anatomy £4 4s.). At the Glasgow University the fee for each subject is £3 3s. (except Anatomy £6 6s.). The total fees for General Hospital practice and Lectures range from £28 7s. to £44 2s.

IRELAND.

The Dental Hospital of Ireland.

25, LINCOLN PLACE, DUBLIN.

All dental students who have passed their preliminary examination are admissible to the Clinical Instruction of the hospital, after paying fees and subscribing to the conditions prescribed by the staff.

In addition to Clinical Instruction, courses of lectures and demonstrations will be given at the hospital in Dental Surgery and Pathology, Mechanical Dentistry, the Administration of Anæsthetics, crowns, pivots, porcelain inlays, gold filling, &c.

The lectures on Dental Surgery and Mechanical Dentistry are given during the winter, and on Dental Anatomy and Metallurgy during the summer months.

In addition to the longer courses of hospital attendance, special courses of three months' duration will be given to surgeons about to join the Army and Navy, or to practise in the Colonies or remote country districts.

Regulations as to fees and other conditions can be obtained from the Registrar of the hospital, or from

R. THEODORE STACK, *Dean*.

ADDITIONAL QUALIFICATIONS.

A qualification in medicine and surgery, in addition to the L.D.S., is of great value to the dental surgeon. The curricula demanded by the various medical corporations are much broader than that required for the dental diploma, and the student who fulfils such curricula naturally acquires a greater breadth of knowledge which cannot fail to be of use to him in treating many of the pathological conditions met with in the mouth.

To those intending to take an additional medical qualification, the following will be found a good plan. The references are made, for the sake of an example, to the English qualifications, viz., the L.D.S. in connection with M.R.C.S.Eng., and the L.R.C.P.Lond.

The alterations made by the College of Surgeons of England in the dental curriculum have virtually made the curriculum for the 1st and 2nd professional examination for the conjoint examination identical with that for the dental diploma, and by allowing the mechanical work, the materia medica, and theoretical and practical chemistry to be taken before registration, gives the dental student greater opportunity for taking in addition to the L.D.S. the conjoined diploma, of which it is to be hoped he will take advantage. Inasmuch as the dental students have to take the same subjects as the general student, it would be wise, with a view to thoroughness, that the 1st and 2nd professional examination for the conjoint diploma should be passed, thus ensuring that the subjects are properly attended and learnt. The subjects for the final examination for the M.R.C.S. and L.R.C.P. can then be taken at leisure, and may extend over some years, and the examinations passed from time to time as opportunity arises, even after the student has begun dental practice.

Those students who have passed the 1st and 2nd examination for the conjoint diploma will not be examined in anatomy and physiology at the examination for the L.D.S.

During the mechanical apprenticeship, which is recognised by the College of Surgeons when taken previous to the preliminary examination, the student can receive instruction from any registered medical practitioner, or any pharmaceutical chemist, or at a public hospital, or infirmary, or dispensary, in chemistry, including chemical physics, practical chemistry, pharmacy and materia medica, and after the preliminary examination has been passed, he should register as both a dental and medical student, and present himself for examination in

these subjects before entering a hospital (or if he prefers it, he may take the two latter later in his career, viz., at the second examination), then enter simultaneously at a general and dental hospital. At the expiration of his first winter session at a general hospital let him pass in elementary anatomy and physiology, at the end of his second winter let him take anatomy and physiology.

At the expiration of two years he may present himself for the dental licence; he will during these two years have been attending simultaneously both the general and dental hospital. During the remainder of his time he should devote himself to surgery, medicine, and midwifery.

It is felt that the recent changes brought about by the amalgamation of the two colleges have greatly increased the difficulty of obtaining these higher qualifications; such is not really the case, the curriculum being really simplified.

For the convenience of reference the mode of procedure is tabulated as concisely as possible, for the dental student to obtain the three diplomas:

1. Preliminary examination.
2. Apprenticeship.
3. Registration as a dental and medical student, or this latter can be postponed until entry at hospital.
4. During apprenticeship receive instruction as above in chemistry, materia medica, and pharmacy, and passing in them at the Examination Hall.
5. Enter simultaneously at a dental and general hospital.
6. Pass in elementary anatomy and physiology at end of first winter session.
7. Pass in anatomy and physiology at end of second winter session.
8. Take dental licence at end of second year.
9. Devote remainder of time to medicine, surgery, midwifery, &c.
10. Pass the final examination of the two colleges.

The best plan, however, for those who have the time to spare, is to complete the examinations for the medical qualification, and then enter at a dental hospital and subsequently take the dental diploma. In this way the student brings the whole of his knowledge of general surgery and medicine to bear upon the special surgery of the mouth, and naturally obtains a clearer insight into the pathology of the various affections he has to deal with.





1 GAL 230

1 gal

~~265~~ +

